Abstract

Hungarian Temporal and Aspectual Reference in the Absence of Dedicated Markers
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In recent years, work has emerged suggesting that a wide range of languages lack paradigms of overt, fully grammaticalized morphemes to express tense and aspect distinctions. This dissertation asks how a language without such dedicated morphology might express these meanings by exploring the following two strategies for expressing tense/aspect distinctions in Hungarian.

No systematic marking of grammatical/viewpoint aspect categories (e.g. Progressive, Imperfective) exists in Hungarian. These semantic distinctions are instead retrieved through the interaction of several factors, including facts about the discourse context, properties of the predicate, word order, and the presence/absence of verbal particles and temporal frame expressions. *Éppen*, which I argue is best analyzed as a discourse particle in the tradition of Beaver & Clark (2008), is used to specify aspectual distinctions in a variety of aspectually ambiguous contexts, and gives rise to a separate but related range of precisifying effects when it occurs with scalar expressions. I propose that *éppen* presupposes the existence of a unique strongest alternative to the current question, and asserts that the prejacent be construed as that alternative, thereby picking out the strongest reading from a set of possible alternatives. This analysis provides a first sketch of a heretofore undocumented strategy for expressing aspectual distinctions, and allows for a unified account of seemingly diverse distributions and interpretations.

The only overt, grammaticalized marker of tense in Hungarian is the Past morpheme (*-t*). Future reference is expressed either with the null/unmarked Non-past tense or with *fog*, which I argue is a modal verb. Analyses of English future-referring strategies (e.g. 'will', 'be going to', Present, Present Progressive) that are proposed to be cross-linguistic fall short for Hungarian, suggesting that there is greater diversity in how languages express future reference cross-linguistically than previously thought. I suggest that the facts can be explained based on interactions of context, properties of the predicate, and the semantics of the Non-past and *fog*. If *fog* has a metaphysical modal base, which forces *fog*'s obligatorily future reference, we can account for a distribution in which *fog* is preferred for expressing future reference in some contexts and the Non-past is preferred in others by appealing to pragmatic blocking relationships and speaker preferences familiar from the domains of scalar implicatures and indirect speech acts. The Hungarian facts suggest that languages can succeed at expressing nuanced temporal information with relatively few dedicated markers. This analysis allows for these complex distributional differences between future-referring expressions to be accounted for with a fairly rudimentary semantics if properties of the context of utterance are sufficiently spelled out.

This project provides novel insights into the understudied topic of the semantics of tense and aspect in Hungarian, and contributes to the growing understanding of the range of strategies available to express tense and aspect cross-linguistically. I suggest that at least for Hungarian, the role of context is crucial for the specification of temporal and aspectual reference.

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Glossary and font conventions

In examples, I follow the Leipzig Glossing conventions (http://www.eva.mpg.de/lingua/resources/glossing-rules.php) with the addition of the following notations for Hungarian:

DEF	definite object
INDEF	indefinite object
INF	infinitive
ILL	illative case
TEM	temporal case
MOD	modal suffix
ASP	aspectual suffix
COND	conditional mood
SUBJ	subjunctive mood
IMP	imperative
INE	inessive case
ACC	accusative case
DAT	dative case
ADE	adessive case
ALL	allative case
NPST	Non-past Tense

Morphemes whose status is controversial and/or that I am making specific claims about (e.g. *fog*, *éppen*) will be glossed just with a small caps version of the original morpheme (e.g. FOG). Boldface is used to highlight elements in the object language that are of particular importance to the discussion in the text.

In formalisms, small caps are used to indicate the names of semantic operators (e.g. IMPF, NPST), and natural language expressions are italicized (e.g. $[[\mathit{fog}]]$).

Hungarian, when mentioned in the text, is indicated with italics (e.g. the word *fog* is used for future reference). English, when mentioned in the text, is indicated with single quotes (e.g. the word 'will' is used for future reference). Double quotes are used for direct quotations and mentions of other authors' labels (e.g. authors claim there is a class of "auxiliary" verbs in Hungarian).

Examples obtained by 'Googling' are marked with a γ, a convention introduced by Horn (e.g. in Horn 2013).

Although it goes against the standard convention, I occasionally use contractions in contexts where I feel the full form is unwieldy. To some extent, I believe this choice reflects ongoing diachronic shifts in what is acceptable in written English. I apologize in advance to any readers who feel that this makes the text feel informal.

Acknowledgements

Our lives are ruled by time and our perceptions of it, but I think we rarely focus directly on developing an understanding of what that means, even though every utterance we conveys temporal information. It has been a privilege to be able to spend some of my own limited time exploring a corner of this deep topic. I would like to thank the following people, without whom I would no doubt have traveled a different path.

First and foremost, I am grateful for the support of my advisor, Ashwini Deo. She has ceaselessly encouraged me to become more precise in my writing, and hence in my understanding. Without her continued patient help and infectious curiousity about matters of tense and aspect, this work would not exist. I have never met anyone as clearly driven to solve the puzzles they explore, and her dedication and pleasure in the chase for answers have been inspirational beyond what I can express.

I am grateful to Bob Frank, who for a time served as my co-advisor and has since been a member of my dissertation committee. Bob has been revered among graduate students for his sometimes frightening skill in asking 'the hard questions', and it is in part for this reason that I sought out his help, on the assumption that it is better to face such questions earlier rather than later. I have benefited from his quickness in noticing errors (in everything from large-scale reasoning to lambda calculus to LaTeX), and I am thankful for his perspective as someone *not* fully steeped in the literature on tense and aspect.

Many wonderful things have been said about Larry Horn, but I think not as many as have been said *by* Larry Horn. It has been my great great pleasure and honour to experience his seemingly infinite store not only of facts but also of deep insight, and to share in his delightful humour. Despite his continuous innumerable contributions to the field, he always made time to read my work carefully and answer any questions I had. For this I am incredibly grateful. His attention alone suggested to me that perhaps there is value in the questions I have endeavored to explore. Certainly, without his teaching, I would have stood no chance of seeing out beyond truth conditions and into the landscape of conversation - and to me, that is what this is all really about.

I have been very lucky that Zoltán Szabó has been willing to not only help with the analysis in this work, but also to answer my naive questions about Hungarian. It is rare, I think, for a student to find an authority in their corner of a subfield and a language informant rolled into one. His patience in correcting my ignorance about the facts of Hungarian has been verging on superhuman. I am incredibly grateful for his continued help as well as for his enthusiasm about tense, aspect, and Hungarian.

Judith Tonhauser has been a voice of clarity throughout my writing process. Every time I thought that I was carefully working through a problem or explanation, a look at her notes or a conversation with her would reveal the heart of things to me in an unexpected way. I am truly grateful for her simple, gentle way of bringing me back to things that I had missed, as though she pulled off a blindfold I didn't know I was wearing. This is no small thing, and to me her skill with explanation and reasoning still look like magic. I have no doubt that this will stick with me well beyond today, and I hope I can continue to benefit from her example.

I was lucky enough to talk briefly on a couple of occasions with Cleo Condoravdi, and I would like to thank her for taking the time to talk about my admittedly fuzzy ideas about tense and aspect in Hungarian, as well as for her body of work that I have borrowed from extensively here.

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Thank you also to those involved in the SYNC, BLS (Berkeley Linguistics Society), and PLC (Penn Linguistics Conference) conferences for providing feedback on very early, rough versions of this work.

The essence of any work on language is, of course, the speakers. The Directed Independent Language Study (DILS) program at Yale matches interested students with skilled tutors in languages not otherwise offered. I am grateful to everyone involved in that program, but especially director Angela Gleason, who helped me to make the most of the opportunities her program offered at every turn. I also benefited enormously from a very intense two weeks at the Debreceni Nyári Egyetem (Debrecen Summer School), which I eagerly recommend to anyone interested in Hungarian.

Through DILS, I worked with GergH́ o Toth, my primary informant. Gergő, with many years experience as a teacher of both Hungarian and German, came to our arrangement with an excitement for understanding the intricacies of language that enabled us to go much further than would otherwise have been possible. He seemingly never tired of my asking infinite variations on the same questions, and for that patience I cannot express my gratitude. I have been lucky in that Hungarians often have a deep love of their language, but in working with Gergő I saw that fully realized. I owe almost all of my discoveries in this work to his unfaltering willingness to engage in what were sometimes very draining conversations about nuanced differences between utterances. I dare to hope that the work we did together has enriched his understanding and affection for Hungarian even a small fraction of the amount it has for mine. Without his persistence and insight, this work would not have been possible.

I have been truly lucky that the love of their language seems almost to be a genetic feature in those of Hungarian descent. A remarkable number of friends and family have put up with my tedious questioning (even filling out written questionnaires at dinner parties without complaint). Thank you to my family: my father Peter Palffy-Muhoray, my grandmother Éva Palffy-Muhoray, aunt Érzsebet Lake, and cousins Béa and Peti Somfalvi. I especially want to thank my lifelong friends Thomas Fai and Miki Rácz, who not only bravely bore my questioning, but even volunteered to pass on questionnaires to their friends and family, so that my personal quest rippled outward until people I didn't know were sending data. Thus thank you also to Judit Fai, György Fai, Éva Meszéna, and Zoltán Rácz. Thank you also to all those others who kindly volunteered their time to fill out questionnaires, whether they knew me or not. All errors are, of course, mine alone.

I would urge everyone in academia to aim for a well-balanced life, to engage in passions outside their field. My efforts toward this, and luck, have brought two unexpected teachers, friends, and mentors into my life who have changed it in profound ways. If I have even a shred of sanity left, it is thanks to their influence.

Thank you to Larry Gall, Head of Computer Systems and Collections Manager in Entomology at the Yale Peabody Museum of Natural History. He has been my champion at every turn, has given me a home away from home, a job, a hobby, a refuge, an escape, and so much more. Without Larry I might have drowned in the trials of graduate school, but his infectious energy, passion, and support have buoyed me when I needed it most.

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without them? Dance may be the best thing I have ever learned to do. In anything, you have to push down to go up.

Despite the fact that I have been very busy and not much fun for the past several years, my friends and family have magnanimously not abandoned me. Thank you first to my parents, for continuing to be nice to me even when I have been too stressed to return the favour, and also for not minding my sometimes extreme take on independence.

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To Mr. Joseph Shaw

Chapter 1

Introduction

1.1 Goals

Developing an understanding of the role of time and temporal reference in language has been a substantial avenue of research in semantics for as long as the study of meaning has been around, but a majority of the work that has been done has focused on English and other (Indo-)European languages. This focus initially contributed to views that tense and overtly marked aspectual distinctions are central to the specification of temporal relationships cross-linguistically, but recent work on a wider variety of languages has increasingly illuminated systems that have either minimal tense and/or aspect systems, or no tense at all (see, e.g. Bohnemeyer 1998; Dahl 2001; Bittner 2005; Matthewson 2006, and Tonhauser 2015, which argues that a cross-linguistically viable theory of temporal reference must acknowledge the full range of strategies for expressing these distinctions). If overt, obligatory tense is merely one of many ways that a language can specify temporal reference, rather than a primary or fundamental cross-linguistic property of language, then further work is needed in order to determine what, if any, universal constants are involved in how languages achieve temporal reference and express aspectual distinctions. This suggests that the time is ripe for exploring how temporal relationships can be specified across languages, particularly in those with 'deficient', minimal, or non-existent tense systems. Hungarian, with only a Past/Non-past tense distinction and no fully grammaticalized marking of aspectual distinctions, is a prime target for such research.

Although several notable properties of Hungarian (e.g. vowel harmony, separable verbal particles and focus-marking) have generated much attention in multiple linguistic domains, very little work has been done from a formal semantics or pragmatics perspective on tense and aspect in Hungarian. The goal of this dissertation is to make strides in this direction in hopes of contributing to the emerging body of formal semantics literature on cross-linguistic variation in tense/aspect systems, and in particular the discussion on how speakers convey and understand temporal and aspectual distinctions for which there are no overt grammaticalized tense and or aspect markers. In the absence of such grammaticalized marking of tense and aspect categories, interlocutors must rely on elements that can influence temporal reference more or less indirectly, such as aspect, modality, the presence of temporal frame expressions, and contextual cues.

To this end, I take an in-depth look in this dissertation at two topics in tense and aspect in Hungarian: how future reference is conveyed using the Non-past tense and the modal verb *fog*, and how aspectual distinctions are specified with the discourse particle *éppen*, which acts as a precisifier (e.g. English 'exactly', 'just'). In both cases, interlocutors express and retrieve intended temporal and aspectual information based on a number of interacting factors, including properties of the lexical semantics of the predicates involved, the semantics of aspectual operators, modals, tense, and information available in the context. At the core of my analyses is the notion that a wide range of readings and complex distributional patterns can be accounted for with a fairly rudimentary semantics if the interaction between the truth-conditional semantics and properties of the context are sufficiently spelled out.

1.2 Roadmap

Chapter 2 introduces basic facts of Hungarian, and goes into some detail about topics relevant for understanding how speakers make temporal and aspectual distinctions in Hungarian, including basic assumptions about tense, aspect, and modality.

Chapter 3 treats the aspectual uses of *éppen*. I propose that *éppen* instantiates an aspect-marking strategy somewhere in between systematic grammaticalized marking and the use of temporal expressions like 'tomorrow' or 'for an hour'. That is, *éppen* is optional but can be productively used to specify aspectual information. With imperfective predicates, *éppen* restricts possible interpretations to those that are typically associated with progressive morphology cross-linguistically: event-in-progress and delimited habitual readings. With perfective predicates, *éppen* restricts possible interpretations to those in which the reference interval is no longer than the event's run-time. With stative predicates, *éppen* gives rise to an implicature that the property described by the predicate is temporary. By analyzing *éppen* as an inquiry-terminating discourse marker in the tradition of Beaver & Clark (2008), we can account in a unified way for how *éppen* gives rise to these three aspectually distinct effects when it occurs with different predicate types. The Hungarian aspectual system differs from those of other well-studied European languages in that it has no dedicated, grammaticalized aspectual markers. This also distinguishes Hungarian from other languages with minimal tense systems, as several such languages have been found to rely in part on a rich system of grammaticalized aspectual markers in order to indirectly specify temporal reference Tonhauser (2015), e.g. Paraguayan Guaraní (Tonhauser 2011), Chinese (Lin 2006), Kalaallisut (Bittner 2005), and Yucatec Maya (Bohnemeyer 2009). This analysis of *éppen* shows that the flexibility of discourse particles can be harnessed to convey temporal and aspectual information in the absence of dedicated markers.

Chapter 4 examines *éppen*'s non-aspectual effects, in which it acts as a precisifier. Like English 'exactly', 'right', 'just', and Hungarian *pontosan* 'exactly', *éppen* gives rise to increased standards of precision for the scale associated with the expression it occurs with. I propose that the analysis in Chapter 3 can be extended to account for these three non-aspectual effects of *éppen*. This analysis also allows for an explanation of the fact that *éppen* is frequently used when the truth of a proposition is surprising, unplanned, or a matter of coincidence or happenstance. Accounting for these various effects in a unified way suggests a relationship between the seemingly disparate functions of discourse particles, which modify the set of an alternatives contributed by a context, and aspectual markers, which impart information about the relationship between the time of an event and the reference time of an utterance.

Chapter 5 takes a detailed look at the distribution of *fog* and the Non-past in realizing future temporal reference. The presence or absence of explicit temporal frame expressions and clear contextual cues about temporal reference interact with properties of predicates and aspectual operators in order to determine whether the temporal reference of Non-past sentences is present or future. In contrast, *fog* is a modal verb that gives rise to future temporal reference obligatorily in all contexts. The difference between the temporal properties of the Non-past and *fog* factors into which construction speakers choose to convey future reference in a given situation. I propose semantics for the Non-past and *fog* that account for their distribution in future-referring sentences, and explore in some detail how context and predicate type play a role in how and when future reference arises with each construction. As with the account of *éppen*, this analysis suggests that it is possible to capture a rich set of readings and distributional patterns using relatively simple machinery if the interaction between properties of the context with the semantics of predicates, aspectual operators, and tenses are explicitly spelled out. Such an approach succeeds at capturing the Hungarian patterns, despite the fact that it does not rely on patterns claimed in other work on future reference to be cross-linguistic (e.g. Copley 2009, which proposes that a complex semantics is necessary to account for distributional differences between, for example, English 'will' and 'be going to'). This adds to the developing understanding of how diverse the range of strategies for expressing future reference across languages is.

In Chapter 6, I suggest that in at least some circumstances, the choice of whether to use *fog* or the Non-past to express future reference depends on the type of speech act involved. I propose that Searle's classification of illocutionary acts and his analysis of how indirect speech acts are interpreted (see Searle 1969, 1975, 1976; Searle & Vanderveken 1985) allow for a characterization of the contextual properties that impact how appropriate the use of the Non-past and *fog* are in a range of speech act contexts. Further, it shows that the distributional patterns arising from the interaction of multiple strategies for expressing future reference in are influenced by the illocutionary force of an utterance, suggesting that these properties of contexts may be crucial for analyses of temporal reference.

In Chapter 7 concludes by stepping back and summarizing some broader implications of the analyses of *éppen* and future reference in Hungarian.

1.3 Data and Methodology

The Hungarian data in this dissertation is of three varieties. Data from www.google.com searches is marked with a γ following Horn's convention (Horn & Abbott 2012: 335 and others). Data attested on Hungarian teaching websites or in books is cited with a footnote attached to the example. The majority of the data was developed through work with informants. In some cases, I constructed example sentences and contexts of utterances and asked informants for acceptability judgements either through questionnaires or verbally in person with a written copy for reference. In other cases, I asked for translations of English sentences, and used the resulting Hungarian counterparts in examples. Informants are all native speakers of Hungarian who regularly use the language for communication.[1] A primary informant, Gergő Toth, worked with me through the Yale Directed Independent Language Study (DILS) program (http://cls.yale.edu/dils). As a Hungarian instructor as well as a native speaker, his judgements were invaluable not only in checking hypotheses but also in teasing apart what might underlie the patterns described here. Lastly, Zoltán Szabó very kindly read many, if not all, the example sentences in this dissertation and offered judgements. With that said, any errors or misinterpretations of data are purely my own. Further, it became evident in working with informants that significant individual variation exists in certain domains. This will be mentioned as it arises, with the understanding that in all cases, the judgements hold for at least some speakers. Given the fact that the analyses herein hinge on arguably subtle inferences about contexts, I would expect to find individual variation across the board. Developing an understanding of the variation between speakers for these topics is a matter for future work of a larger scale experimental nature.

Where possible, I have included a context of utterance with example sentences. Exceptions include only those example sentences borrowed from other works in the literature or websites (e.g. www.twitter.com-like websites) in which no context was available.

1.4 Basic semantic assumptions

I adopt a standard model-theoretic semantics in this dissertation, consisting of an ontology, lexical entries, and compositional rules. To begin with I assume a Davidsonian (Davidson 1967) event semantics.[2] The primary focus of this dissertation is the relationship of events and states to various temporal intervals.[3] I will make use of the following notions, and additional machinery will be introduced as needed.

Temporal reference is to be understood as the relationship between the time of utterance and the time

1 As a heritage speaker of Hungarian, I predominantly worked with family and personal friends, some of whom passed on questionnaires to other native speakers.

2 The differences between a Davidsonian and Neo-Davidsonian event semantics will not be of issue in this work.

3 In the text, the terms 'time' and 'interval' are used interchangeably.

the utterance is about. The time an utterance is about is referred to as the reference interval RI (this is equivalent to topic time). I will also make reference to 'tense' and 'Tense'. The term 'tense' is to be understood as the fully grammaticalized morphological marking of an event or state's location in time (Comrie 1985), more specifically, the relationship between the reference interval and the utterance interval. 'Tense' is part of the name of a language-specific marker of tense (e.g. English Past Tense).[4]

Grammatical (or viewpoint) aspect refers to semantic categories that specify the relation between the time of an event and the time of an utterance. I take the imperfective and perfective to be aspectual operators in the semantics. These categories are sometimes realized cross-linguistically with overt morphemes, which I will refer to as aspect markers. Interpretations that arise from the use of such markers will be referred to as imperfective or perfective interpretations or readings.

I refer to properties of the structure of events as lexical aspect. This is intended to be more or less equivalent to Aktionsart(en). I will use the Reichenbachian classification of predicates (Reichenbach 1947) to differentiate between eventualities with different lexical aspect properties.

I take a Kratzerian (Kratzer 1991) view of modals as quantifiers over worlds evaluated against a double conversational background consisting of sets of propositions, namely, the modal base and ordering source. In order to accommodate modal components, some other parts of the semantics (e.g. predicate instantiation) will make reference to a world of evaluation.

I will need to make reference in three separate instances to specific properties of contexts and the common ground, or the set of knowledge that is presumed to be shared by interlocutors. In all three instances this is dealt with in different ways, because that is what is best suited to specifics of the separate analyses. In Chapter 3 I define context, context set, and other elements following the framework in Beaver & Clark (2008). In Chapter 5, I will refer to the common ground again via Condoravdi (2002) in order to define her Diversity Condition for modals. Chapter 6 looks at contextual properties through Searle (1975) and Searle & Vanderveken (1985) in order to see how indirect speech acts are interpreted. I do not believe any of the definitions are in conflict, and their wording and presentation differ only slightly.

4 This convention of associating capitalized labels with language-specific morphological markers goes back at least to Comrie (1976).

Chapter 2

Hungarian: basic facts and theory

2.1 Introduction

This chapter introduces basic facts of Hungarian, and goes into some detail about temporal and aspectual distinctions. At the same time, the semantic and theoretical assumptions needed for the subsequent analyses of tense and aspect are introduced.

§2 introduces Hungarian, including what language family it belongs to, which word order patterns it exhibits, and other basic facts about sentence structure. §3 introduces Partee (1973)'s view of tense, and gives a basic overview of grammaticalized marking of tense in Hungarian, at the end of which I propose lexical entries for the Past and Non-past. §4 looks at evidence suggesting that Hungarian has covert imperfective and perfective aspectual operators, based on ideas from Klein (1994), Kratzer (1998), and Hacquard (2009), among others. I borrow a semantics for these operators from Deo (2009b). §5 introduces the class of auxiliary verbs in Hungarian, which leads into a discussion in §6 of the range of grammaticalized markers available to express modality in Hungarian.

2.2 Basics

Hungarian belongs to the Uralic language family, which has two main branches: the Finno-Ugric branch and the Samoyedic branch. The Finno-Ugric branch, in which Hungarian is located, unsurprisingly divides into the Finnic and Ugric branches. The Finnic branch is the largest in the Uralic family, and consists of more than 20 extant languages.

The Ugric branch of the Uralic family contains only three languages: Hungarian, Khanty, and Mansi.[1] Of these, only Hungarian has enough speakers and children acquiring the language for it to be considered healthy by the standards of UNESCO and similar organizations.[2] It is estimated that Hungarian has about 12,501,270 native speakers (Fenyvesi 2005; Lewis, Simons & Fennig 2009), whereas all varieties of Khanty cumulatively have approximately 13,600 speakers, and Mansi is spoken by an estimated 2,750 people in Western Siberia (based on www.ethnologue.com statistics from 2010 censuses). In other words, Hungarian is the only Ugric language not seriously endangered. As such, field work on core features of Hungarian is of particular importance: such work may represent the only opportunity to discover patterns unique to healthy Ugric languages.

1 There are multiple ways of writing the names of the Khanty and Mansi languages. I am choosing these names because this is how they are listed in contemporary lists of languages, such as at http://www.ethnologue.com and at www.wikipedia.org. In the literature, they have also been known as: Hanty, Khant, Khanti, Ostyak, Xanty; and Mansiy, Vogul, Vogulich, Voguly, respectively. I recognize that the naming of a language is a complex issue, and so I offer deep and sincere apologies if the labels I use are in any way inappropriate or offensive to members of these linguistic communities.

2 See http://www.unesco.org/culture/languages-atlas/ for details.

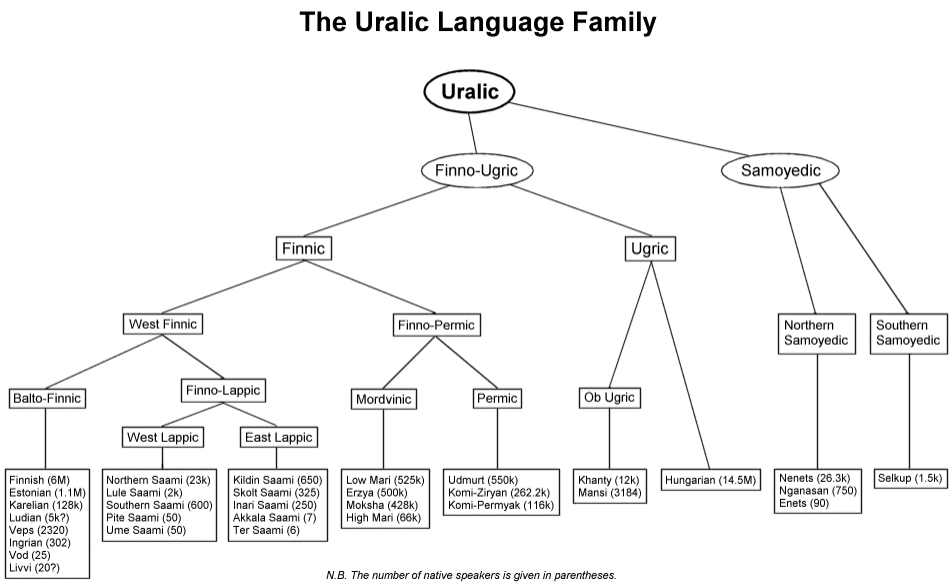

Figure 2.1 Figure from http://languageserver.uni-graz.at/ls/mat?id=1054&type=m, but the link is now broken.

Speakers of Hungarian migrated from the Ural mountains to the Carpathian basin between 500 and 900AD. During that time, Hungarian was heavily influenced by contact with speakers of Turkic languages, and later by contact with Slavic languages (Thomason 2005), most obviously in terms of the lexicon, but with some (albeit controversial) evidence of structural and possibly semantic borrowing from Slavic languages (Talmy 2011; Kecskes 1989; Kiefer 1997).

Hungarian is a strongly agglutinative language,[3] with that agglutination being almost exclusively suffixal.[4] Hungarian has an infamous set of separable verbal particles which are sometimes erroneously referred to as prefixes. These particles are similar in some respects to Slavic verbal prefixes which contribute to aspectual reference, and also have much in common with the English particles in phrasal verbs such as 'call *up*' or 'wash *out*'. See §2.4.2 for details.

Hungarian has a fairly structured word order preverbally, and is comparatively free post-verbally. All 6

3 To illustrate, the following is a long word which is not a compound: *lelegeslegmegszentségteleníttethetetlenebbjeitekként*, meaning 'like those of you who are the very least possible to get desecrated' (from http://en.wikipedia.org/wiki/Hungarian_language).

4 To my knowledge, there is only one exception to this rule: the superlative is expressed with morphemes which can be seen either as a circumfix *leg-* -V*bb*, or a combination of the prefix *leg-* and the comparative suffix -V*bb*, as in the following.

(i) Context: Some friends disagree about who is the kindest.

a. János kedves.
János kind
'*János is kind*.'

b. Mari kedves-**ebb**.
Mari kind-COMP
'*Mari is kinder*.'

c. Attila **leg**-kedves-**ebb**!
Attila SUP-kind-COMP
'*Attila is the kindest*!'

possible permutations of subject, verb, and object (SOV, SVO, OVS, OSV, VOS, VSO) are grammatical under various circumstances, but the two most predominant or 'default' word order patterns are SOV in sentences without a specified direct object (those without a definite determiner), and SVO in sentences containing specified direct objects, as in (1) (see MacWhinney & Pléh 1988, a.o.).

(1) Context: I ask what a friend ate for dinner.

a. János csirkét evett.
János chicken.ACC eat.PST.3SG.INDEF
'*János ate chicken.*' SOV

b. Attila ette a csirkét.
Attila eat.PST.3SG.DEF the chicken.ACC
'*Attila ate the chicken.*' SVO

Even this minimal generalization about word order patterns is an oversimplification. Throughout this work we will see all manner of word order patterns with various associated interpretations. As in many (if not all) languages with 'free' word order, 'free' does not mean that all word orders are equivalent so much as that all word order arrangements are possible and associated with a range of interpretations.

Hungarian is a pro-drop language, and subject pronouns are rarely used except in the event that they take focus (and stress):

(2) a. Context: What did you have for dinner?

Ettem a csirkét.
eat.PST.1SG the chicken.ACC
'*I ate the chicken.*'

b. Context: My mom asks who ate the chicken. I say:

'**Én** ettem a csirkét!
I eat.PST.1SG the chicken.ACC
'*I (as opposed to someone else) ate the chicken!*'

Hungarian is famous (infamous?) for its patterns of focus: work on preverbal focus in Hungarian has (or perhaps had) been thought to be constrained largely by its adherence to the dictates of logical scope, giving rise to Hungarian's reputation for 'wearing LF on its sleeve'. However, I will abstract away from this topic as much as possible because if the literature is any indication, discussions of Hungarian focus can span the careers of entire generations of linguists. With that said, all that is really needed for this work is the idea that the preverbal position in Hungarian is a special one: it not only attracts focused elements, as in (2), but it is also the locus of a wide variety of other elements, including but not limited to verbal particles, negation, wh-words, and indefinite direct objects.

(3) a. Context: My mom asks me if I got enough to eat. I say:

Meg-ettem a csirkét.
PART-eat.PST.1SG.DEF the chicken.ACC
'*I ate up the chicken.*' Verbal particle

b. Context: My brother asks me if there are any leftovers from my lunch. I say:

Nem ettem a csirkét.
NEG eat.PST.3SG.DEF the chicken
'*I didn't eat the chicken.*' Negation

c. Context: My sister looks in the fridge, and demands:

Ki ette a csirkét?
who eat.PST.3SG.DEF the chicken
'*Who ate the chicken?*' Wh-word

d. Context: My dad asks what I had for lunch. I say:

Csirkét ettem.
chicken.ACC eat.PST.1SG.DEF
'*I ate chicken.*' Direct object

2.3 Tense

2.3.1 Semantics of tense

I intend 'tense' to be understood as the fully grammaticalized morphological marking of an event or state's location in time (Comrie 1985: 9), which is determined by the relationship between the reference interval (RI) and the utterance interval. The reference interval is the time that an assertion makes a claim about, or a question asks about. In (4), the RI is the time of the party.

(4) Context: I run into a friend and ask if she's planning to attend my sister's birthday party.

a. Are you going to the party?

b. No, I have to work.

Assuming the interlocutors are cooperative and rational conversational partners, it must be part of the common ground that both interlocutors know approximately when the party is in order for the exchange in (4) to be felicitous.

I take tense to be referential, following in the tradition of Partee (1973). On this view, tenses combine with predicates of times in the same manner that a pronoun combines with a predicate of individuals. I adopt this view because it allows us to capture the intuition that when we utter a sentence like the following famous example from Partee (1973: 603), we are referring not to all past time (from $-\infty$ to *now*), but typically have some specific past subinterval in mind.[5]

5 The accepted alternative to this view is that tenses are sentential operators that introduce existential quantification over times. Such accounts offer lexical entries for tenses like that in (i) for the English Past, adapted from Hacquard (2006: 46). In this case, PAST takes a predicate of times and returns a proposition that is true iff there exists some time before the speech time (*now*) and the predicate holds of that time.

(i) $[\![past]\!]^{g,i,w} = 1$ iff $\exists i' [i' < now \wedge P(i')]$

(5) I didn't turn off the stove.

A semantics for the English Past like that in (6), adapted from Kratzer (1998), captures the idea that tense is referential: PAST combines with a predicates of times in the same manner that a pronoun combines with a predicate of individuals. The context provides a variable temporal interval *i*, and if this interval is located < *now*, then the proposition is evaluated as true.

(6) $[\![past]\!]^{g,c}$ is defined iff *c* provides an interval $i \subseteq (-\infty, now)$.
If defined, $[\![past]\!]^{g,c} = i$

Lexical entries for tenses in Hungarian will make use of this theory of tense.

2.3.2 Hungarian: Past and Non-past

Hungarian has a binary tense distinction. Past temporal reference is marked with a dedicated, grammaticalized Past tense morpheme. In tensed clauses, verbs in Hungarian are obligatorily inflected for tense, subject person and number, and definiteness of the object, as in (7).[6]

(7) Context: I tell my aunt that my brother read the book she gave him.

János olvas-**ta** a könyv-et.
János read-**PST.3SG.DEF** the book-ACC
'*János read the book.*'

Claiming a binary tense distinction for Hungarian is not novel (e.g. Lotz 1962, É Kiss 2006a). Much of the literature on Hungarian assumes something similar, but some (especially older) literature claims a 3-way tense distinction instead, with a Past, Present and periphrastic Future tense, *fog* (e.g. Papp 1989a, Csató 1992).[7] I take the binary tense system to be better suited to the Hungarian facts as in (8).

(8) a. Context: My family is trying to clean out the freezer. I report that I helped by finishing the ice

See Partee (1973) and Kratzer (1998) for arguments supporting the referential view of tense over quantifier analyses.

6 Verbs can also be inflected for conditional and subjunctive/imperative mood, as in (i). These examples are from Rothstein & Tieroff (2010: 12), which points out that the subjunctive has a range of uses/interpretations in Hungarian, including: imperative, behavioural, hortative, prohibitive, dishortative, admonitive, and supplicative.

(i) a. Ha meg-talál-**n**-ám Feri-t, (akkor) el-men-n-énk moziba.
if PART-fine-NPST.COND-1SG.DEF Feri-ACC, (then) PART-go-NPST.COND-1PL.INDEF movies.ILL
'*If I could find Feri, we'd go to the movies.*' Conditional

b. Men-**j**-ünk tovább.
go-NPST.SUBJ-1PL.INDEF further
'*Let's go on.*' Subjunctive: hortative

c. Vár(**ja**)d Pál-t!
wait.NPST.IMP.2SG.DEF Pál-ACC
'*Wait for Paul!*' Subjunctive: imperative

7 Other analyses of tense in Hungarian include Bartos (2006), which argues that Hungarian has no tense at all, and that the morpheme *-t* is a perfective aspect marker; and Cowper & Hall (2008), which argues for a binary tense system but that Hungarian tenses are non-deictic.

cream:

Ettem a fagyit.
eat.PST.1SG.DEF the ice.cream.ACC
'*I ate the ice cream.*' Past temporal reference (Past)

b. Context: A friend calls and wants to know why I am mumbling. I tell her my mouth is full because I am eating ice cream:

Fagyit **eszek**.
ice.cream.ACC eat.NPST.1SG.INDEF
'*I'm eating ice cream.*' Present temporal ref. (Non-past)

c. Context: My family is trying to clean out the freezer. I offer to help by telling them that I intend to eat the ice cream:

Holnap **eszem** a fagyit.
tomorrow eat.NPST.1SG.DEF the ice.cream.ACC
'*I will eat the ice cream tomorrow.*' Future temporal ref. (Non-past)

Past temporal reference is realized with the morpheme *-t*, as in (8a). Sentences without the Past morpheme can be associated with either present or future temporal reference, as in (8b) and (8c). If Hungarian exhibited a 3-way tense system, we might expect that different tense markers would be obligatory in utterances with present reference versus utterances with future reference.[8]

Unlike the Past, the Non-past is not realized with an overt tense morpheme (É Kiss 2006a). Finite verbs in sentences with non-past temporal reference take required inflectional suffixes marking subject person and number and object definiteness, but no overt tense marking occurs, as shown in above in (8b) and (8c), and below in (9).

(9) Context: What will János do/be doing tomorrow?

János **olvas-ja** a könyv-et holnap 3-kor.
János read-NPST.3SG.DEF the book-ACC tomorrow 3-TEMP
'*János will read/be reading the book tomorrow at 3.*'

It is possible either that sentences with non-past temporal reference are tenseless, or that there is a null Non-past marker in the language. I will assume for the work in this thesis that sentences with non-past temporal reference are not tenseless, but involve a null Non-past tense marker. This is mostly a move for convenience. Both possibilities are compatible with the data in this thesis, and it is not clear to me that one position provides any real advantage over the other. For simplicity and clarity of explanation, I opt to treat

8 Related to this is that *fog*, a periphrastic marker of future reference, is often thought to be a future tense in sentences like (i). Please see §2.5 and Chapter 5 for evidence against this position.

(i) Context: My family is trying to clean out the freezer. I offer to help by telling them that I intend to eat the ice cream:
Holnap enni **fogom** a fagyit.
tomorrow eat.INF FOG.NPST.1SG.DEF the ice.cream.ACC
'*I will eat the ice cream tomorrow.*'

Hungarian as having a categorical Past/Non-past tense distinction, in which non-past temporal reference is conveyed with a null Non-past tense marker.[9]

Following the discussion above, lexical entries for the Past and Non-past involve referential tense. I use the semantics below, where *now* is the time of utterance:

(10) $[\![past]\!]^{g,c}$ is defined iff c provides an interval $i \subseteq (-\infty, now)$. If defined, $[\![past]\!]^{g,c} = i$

(11) $[\![npst]\!]^{g,c}$ is defined iff c provides an interval $i \subseteq [now, +\infty)$. If defined, $[\![npst]\!]^{g,c} = i$

Because they are indexical, *past* and *npst* are evaluated relative to an assignment function g and a context c, like pronouns. Tense applies to perfectivized or imperfectivized predicates, to be discussed in §2.4.

The future copula *lesz*

There is one notable exception to my claim that Hungarian has only a binary Past/Non-past tense distinction. The Hungarian copula *lenni* 'to be' has distinct forms compatible with past, present, and future temporal reference: *volt*, *van*, and *lesz* respectively, are the third person singular forms. All three can be inflected more or less regularly for person and number, as in (12).[10]

(12) a. Context: I tell a friend about meeting some new people.

Kedves **voltak**.
nice be.PST.3PL
'*They were nice*.' Past copula

b. Context: I bother my mom into making me a snack.

Éhes **vagyok**.
hungry be.NPST.1SG
'*I am hungry*.' Present copula

c. Context: My friends and I are making plans for a trip. I tell them we should get together with Mari, because:

Mari NY-ban **lesz**!
Mari NY-INE be.FUT.3SG
'*Mari will be in NY!*' Future copula

Venni occurs only with stative predicates, and *lesz* is used to assert that these states hold in the future

9 Null tenses have been proposed in other languages, including those with no overt tense marking at all, e.g. Gitxsan (Matthewson 2006) and St'át'imcets (Jóhannsdóttir & Matthewson 2008).

10 The third person singular present form of the verb, *van*, is usually omitted, as in (i).

(i) Context: At a parent-teacher conference, I tell parents about their son.

Csaba okos.
csaba smart
'*Csaba is smart.*' Omitted copula

Omitting the copula is not permitted in all circumstances. See Sebeok (1943: 321).

of the speech time. *Lesz*'s future orientation is obligatory, so it cannot co-occur with elements that are incompatible with future temporal reference, like past-referring temporal frame adverbs, as shown in (13) (Lotz 1962, a.o.).

(13) Context: Attila's mother jokes that he hasn't always been this tall.

#Sok évvel ezelőtt Attila alacsony **legy**.
a.lot year.INST ago Attila short be.FUT
Intended: '*#A long time ago Attila will be short.*'

The copula is the only verb in the language that has an inflected future form. An avenue for future research might be to examine whether more verbs exhibited future-referring forms in older Hungarian.

2.4 Aspect

'Aspect' can refer to viewpoint/grammatical aspect, or to situation/lexical aspect (aktionsarten).[11] Lexical aspect refers to properties traditionally associated with Vendlerian predicate types: durativity, telicity, and dynamicity, and viewpoint/grammatical aspect refers to the relationship between the interval at which an event occurs and the reference interval.

2.4.1 Grammatical aspect

As discussed above, tense locates the reference interval relative to the utterance time, and grammatical aspect is the temporal relationship between the interval over which an eventuality holds and the reference interval. Together, then, grammatical aspect and tense specify the relationship between the utterance interval, the event interval, and the reference interval.

It has been suggested that a number of aspectual categories are relevant for understanding the temporal structure of eventualities in Hungarian, including the imperfective, perfective and progressive (Kiefer 1982, De Groot 1984, É Kiss 2006a, Csirmaz 2006b a.o.).

Imperfective aspect is associated with at least the following three types of readings (Comrie 1976, Deo 2015, and Tonhauser 2015, a.o.).

(14) a. Context: My friend asks if there is anyone we know in New York. I tell her:

Ági New York-ban lakik.
Ági New York-INE live.NPST.3SG
'*Ági lives in New York.*' Continuous

b. Context: My dad calls and asks if my sister is doing her homework. I say yes:

Mari (most) olvas.
Mari (now) read.NPST.3SG
'*Mari is reading (right now).*' Event-in-progress

11 A number of authors have argued for dual use of aspect as 'necessary to distinguish properties that are 'internal' to the eventuality from those that are imposed on the eventuality from 'outside', such as Smith (1997); Klein (1994); Olsen (1997); Bertinetto (2001); Csirmaz (2004a); Borik (2006).

c. Context: My mom asks if all my friends are vegetarians. I say no:

Zsuzsa hús-t eszik.
Zsuzsa meat-ACC eat.NPST.3SG
'*Zsuzsa eats meat.*' Characterizing

The continuous reading arises in sentences containing stative predicates. Event-in-progress and characterizing readings arise with eventive predicates. Characterizing readings include habitual (both delimited and non-delimited) and dispositional readings.

Because Hungarian has no overt grammaticalized aspect markers, imperfective sentences containing eventive predicates can (unlike in English) be ambiguous with respect to the readings described above, as illustrated in (15).

(15) Context: Mari is an avid runner, so I want to tell her what I just heard about János: 'Hey, did you know...

János fut.
János run.NPST
'*János is running.*' Event-in-progress
'*János runs.*' Characterizing

Perfective aspect is associated with readings in which an event is presented as an atomic whole, as in (16):

(16) a. Context: Did you guys do anything fun over the weekend?

Alex went to the movies last night.

b. Context: Let's order sushi!

Ok. I will order salmon sashimi.

c. Context: Have you seen my brother? He was supposed to be home.

Jacob met a friend at the library.

Hungarian examples are given in (17).

(17) a. Context: I ask a friend if she has seen her parents recently. She says no, but that her brother János has:

János hazament mult hónap-ban.
János home.go.PST.3SG last month-ine
'*János went home last month.*'

b. Context: I tell a friend that I was walking by the lighthouse last night. It started raining, and I heard big crashing noises. She asked what happened next, and I say...

János ki-fut-ott a torony-ból.
János PART-run-PST.3SG the tower-ELA
'*János ran out of the tower*.'

As is standard in the Hungarian literature, I suggest that imperfective and perfective aspect are relevant to Hungarian (Kiefer 1982, De Groot 1984, É Kiss 2006a, Csirmaz 2006b a.o.). I adopt a semantics for these operators from Deo (2009b, 2015). Aspectual operators map properties of eventualities or intervals to sets of intervals. Being referential, tense fills the interval argument returned by aspectual operators. On Deo's analysis, the imperfective is a universal quantifier over a regular partition of an interval containing the reference interval, and the perfective operator is an existential quantifier over intervals that contain the reference interval. Chapter 3 fleshes out the semantics of these operators in detail.

2.4.2 Lexical aspect

Telicity is the property that distinguishes between 'accomplishment' and 'achievement' Vendlerian predicates. Vendler describes this distinction as being about whether a verb has a 'set terminal point':

> Thus we see that while running or pushing a cart has no set terminal point, running a mile and drawing a circle do have a 'climax' which has to be reached if the action is to be what it is claimed to be. In other words, if someone stops running a mile, he did not run a mile; if one stops drawing a circle, he did not draw a circle. But the man who stops running did run, and he who stops pushing the cart did push it. Running a mile and drawing a circle have to be finished, while it does not make sense to talk of finishing running or pushing a cart. (Vendler 1957: 145)

Comrie (1976) and others have given similar descriptions of telic verbs and events as involving something like an inherent end-point. Krifka (1998) offers a formal definition of atelicity as a property of predicates, using the mereological notion of a *part*, and relying on quantization and cumulativity. That is, on Krifka's view, atelic predicates are true of every *part* of the total interval for which they are true. This accords with the classic test for telicity whereby measure adverbials like 'for an hour' are felicitous with atelic predicates, and not with telic predicates. The reverse is true with interval adverbials like 'in an hour' (Krifka 1998):

(18) Context: My sister asks if John and I did anything fun this morning. I say:

a. We ran for an hour/#in an hour.

b. We baked a cake in an hour/#for an hour.

For the purposes here, we can get by without a formal algebraic definition of telicity and rely instead on just the intuition that atelic predicates have the Subinterval Property (adapted from Bennett & Partee 1978: 72 and Krifka 1998: 1), and telic predicates do not.

(19) **Subinterval Property:** If a predicate *P* holds at some interval *i*, then *P* holds of every subinterval of *i*

That is, whenever an atelic predicate holds of an interval, it also holds of any part of that interval. Conversely, whenever a telic predicate holds of an interval, it is not necessarily the case that it holds of any part of that interval (Krifka 1998: 1).

2.4.3 Perfectivity, telicity, and verbal particles

Particles, or separable prefixes (also known as verbal prefixes), form a class of much-studied morphemes in Hungarian. A substantial amount of work has been done with the aim of understanding the semantics, syntax, morphology, and diachronic development of these particles. See, for example, Horvath (1978); Kiefer (1982); Ackerman (1987); Kecskes (1989); Piñón (1992); Bende-Farkas (1995); Nurk (1996); Kiefer (1997); Ackema (1999); Ladányi (2000); Grimes (2003); Forgács (2004); É Kiss (2006b). There is no consensus on the total number of particles, largely due to the ongoing grammaticalization of new particles.[12]

The following is a (not exhaustive) list of particles, their meanings, and examples of complex verbs containing each particle. Where possible, one compositional and one idiomatic/metaphorical interpretation have been given for each complex verb.

(20)

át 'across'	*átad* 'hand over', *átjut* 'negotiate'
be 'in'	*befut* 'get in', *befolyik* 'pour into'
bele 'into'	*belefekszik* 'throw oneself into', *beleugrik* 'jump into'
elő 'toward in front of'	*elősegít* 'promote', *előteremt* 'produce'
el 'away'	*elasad* 'tear/rip', *elhebeg* 'stammer'
ellen 'against'	*ellenáll* 'offer resistance', *ellenőriz* 'supervise'
fel 'up'	*felvagdal* 'cut to pieces', *felvesz* 'take/lift up'
hátra 'to the back'	*hátratekint* 'glance back', *hátramarad* 'fall behind'
haza 'home'	*hazaküld* 'send home', *hazagondol* 'think of home'
hozzá 'toward'	*hozzáidomul* 'adapt oneself to', *hozzájut* 'obtain'
ki 'out'	*kiadagol* 'portion out', *kiapad* 'dry up'
körül 'around'	*körülvarr* 'sew round', *körülkapál* 'mold'
le 'down'	*lefőz* 'boil down, *lefokoz* 'degrade'
meg '-'	*megkerül* 'turn up', *megkénez* 'treat with sulfur'[13]
neki 'to him/her'	*nekilát* 'undertake', *nekiverődik* 'beat against'
oda 'over'	*odarak* 'place somewhere', *odasül* 'get burnt'
össze 'together'	*összedob* 'whip something up', *összecseng* 'harmonize'
rá 'to(ward)'	*ráér* 'have lots of time', *ráébred* 'realize'
újjá 'anew'	*újjáéleszt* 'revive', *újjászervez* 'reorganize'
végig 'to the end'	*végigharcol* 'fight it out', *végighuz* 'pull/drag along'
vissza 'back'	*visszahív* 'summon back', *visszabeszél* 'be saucy'

The meaning of each particle + verb combination falls somewhere on a spectrum of (non-)compositionality, depending on the context of utterance and the lexical meaning of the verb in question.[14] The examples in (21) range from a clearly compositional locative meaning in (21a) to the metaphorical meaning in (21d).

(21) Context: I explain to a friend what Éva is doing.

12 Many if not most verbal particles develop when locative/directional post-positions occur predominantly preverbally, e.g. when a location is focused (Forgács 2004). This kind of shift has been taking place since before the earliest written records around the year 1200, at which time *meg-* and *el-* already exhibited aspectual effects and other evidence of grammaticalization.

13 The particle *meg* originated from the post-position *möge* meaning 'behind', but it is semantically bleached. It can no longer be used productively to convey its original meaning.

14 P.c. with Donka Farkas.

a. Éva **ki-megy** a ház-ból.
eva PART-go.NPST.3SG.INDEF the house-ELA
'*Éva is going out of the house.*' *ki-megy*, literally 'under-write'

b. Éva **fel-mos-ja** a padlót.
eva PART-wash-NPST.3SG.DEF the floor.ACC
'*Éva is washing the floor.*' *fel-mos*, literally 'up-wash'

c. Éva **alá-ír-ja** a papír-t.
eva PART-write-NPST.3SG.DEF the paper-ACC
'*Éva is signing the paper.*' *alá-ír*, literally 'under-write'

d. Éva **be-csip-i** a gyerek-et.
eva PART-pinch-NPST.3SG.DEF the child-ACC
'*Éva is pinching the child.*' *be-csip*, literally 'in-pinch'

e. Éva **be-rúg**.
eva PART-kick.NPST.3SG.INDEF
'*Éva is getting drunk.*' *be-rúg*, literally 'in-kick

A prominent but controversial view (e.g. Horvath 1978, Kiefer 1982, Papp 1989b, Kiefer 1997, Grimes 2003, Ürögdi 2006, Dékány 2008, a.o.) is that verbal particles are perfectivizing in utterances like (22).

(22) a. Context: I tell a friend what Mari was doing when she called.

Mari ette a szendvics-et.
Mari eat.PST.3SG.DEF the sandwich-ACC
'*Mari ate (at/some of) the sandwich.*'

b. Context: I tell a friend what Mari did earlier today.

Mari **meg**-ette a szendvics-et.
Mari PART-eat.PST.3SG.DEF the sandwich-ACC
'*Mari ate (up) the sandwich.*'

What is empirically uncontroversial is that the presence of particles correlates to some extent with perfective readings. The above authors take this to mean that particles have a perfectivizing function, but correlation is not enough to support this theory. I follow Csató (1994), Csirmaz (2004a), É Kiss (2006a), É Kiss (2006b) and others in taking particles to be telicizing rather than perfectivizing in utterances like the following pair.

(23) Context: What did Zsuzsa do?

a. Zsuzsa fut-ott.
Zsuzsa run-PST.3SG.INDEF
'*Zsuzsa ran.*'

b. Zsuzsa **ki** fut-ott.
Zsuzsa PART run-PST.3SG.INDEF
'*Zsuzsa ran out.*'

In Hungarian, like in English, the telicity of a predicate can be influenced by a variety of factors. That is, it is not only verbal particles that can be telicizing. For example, telicity is contributed by the phrases in bold in the English sentences in (24).

(24) a. Context: My mom asks where Susan is. I tell her:

Susan ran **out to the street**.

b. Context: My mom asks if the laundry is done. I tell her...

Susan washed the dress **clean**.

Likewise, the Hungarian counterparts in (25) are telicized by the phrases in bold, neither of which are verbal particles ((25b) is borrowed from Csirmaz 2004a: 110).

(25) a. Context: We are doing emergency drills in school. One student had the best response time:

Zsuzsa (két perc alatt) **az utcára** fut-ott.
Zsuzsa two minute under the street.SUB run-PST.3SG.INDEF
'*Zsuzsa ran out to the street (in 2 minutes).*'

b. Context: I got a stain on my sister's dress, but luckily it came out easily enough. I tell my mom:

Zsuzsa (fél óra alatt) **tisztára** mos-ta a ruhát.
Zsuzsa half hour under clean.SUB wash-PST.3SG.DEF the dress.ACC
'*Zsuzsa washed the dress clean (in half an hour).*'

Neither are verbal particles always telicizing. Their effects depend in part on the utterance and the context in which they occur. In the following set of examples from Csirmaz (2004a: 110), the particle *fel-*, often meaning 'up', is telicizing in (26a), but not in (26b).

(26) a. Context: What did János do for his community service requirement?

János **fel** épít-ett egy ház-at.
János PART build-PST.3SG.INDEF a house-ACC
'*János built a house.*' Telic

b. Context: What did János do in English class today?

János **fel** olvas-ott.
János PART read-PST.3SG.INDEF
'*János read aloud.*' Atelic

Csirmaz (2004a) suggests that word order patterns provide further evidence that particles are telicizing rather than perfectivizing. By default, verbal particles surface as prefixes on finite verbs. In the presence of

certain triggers, however, they surface post-verbally as separate words, and need not immediately follow the verb (É Kiss 1994). These triggers include negation, focus, and wh-words (É Kiss 1994, Ackema 1999). The examples in (27) show post-verbal particles.

(27) a. Context: A friend asks how lunch went.

János **meg**-ette a szendvics-et.
János PART-eat.PST.3SG.DEF the sandwich-ACC
'*János ate the sandwich.*' *Neutral*

b. Context: A friend asks how lunch went.

János **nem** ette **meg** a szendvics-et.
János NEG eat.PST.3SG.DEF PART the sandwich-ACC
'*János didn't eat the sandwich.*' *Negation*

c. A friend asks if it was the salad that János ate.

János **A SZENDVICS-ET** ette **meg**.
János the sandwich-ACC eat.PST.3SG.DEF PART
'*It was the sandwich that János ate.*' *Focus*

d. I look in the fridge for my lunch and when I don't find it, I ask:

Ki ette **meg** a szendvics-et?
Who eat.PST.3SG.DEF PART the sandwich-ACC
'*Who ate the sandwich?*' *Wh-word*

An apparent exception to the above pattern poses a challenge for analyses of verbal particles as perfectivizers: in (28), the particle surfaces post-verbally even though none of the discussed triggers are present.

(28) Context: After bird-watching with a friend who saw a rare hawk, I tell my brother that I missed it. By the time I looked up...

A madar repul-t **el**.
the bird fly-PST.3SG.INDEF PART
'*The bird was flying away.*'

The word order in (28) gives rise only to an event-in-progress reading. This is corroborated in the literature (e.g. Kiefer 1982; Csirmaz 2004a; É Kiss 2006b), and was confirmed by informants. We can surmise that *fog* takes the null Non-past. Perfective readings are unavailable, as in (29).

(29) Context: I tell my sister how quickly the bird my friend saw was out of sight.

#A madar repul-t **el** egy perc alatt.
the bird fly-PST.3SG.INDEF PART one minute under
Intended: '*#The bird flew away in one minute.*' Perfective

(28) poses a challenge for analyses of verbal particles as perfectivizers. If verbal particles are obligatorily perfectivizing, then perfective readings should arise regardless of the syntactic position of the particle.

However, if we assume instead that particles are merely grammaticalized locative expressions that sometimes telicize verbs, then (28) is not a problem. The fact that a perfectivizing reading is unavailable when the particle is post-verbal in the absence of triggers suggests only that there is a syntactic relationship between grammatical aspect and the pre-verbal position. In other words, a covert operator may be preventing the pre-verbal position from being occupied by a particle under certain circumstances. See Csirmaz (2004a) for just such an analysis, and further evidence that particles are independent of grammatical aspect.[15]

In sum, I follow the analysis put forward in Csirmaz (2004a) for aspect in Hungarian. On this view, Hungarian contains covert perfective and imperfective aspectual operators, and verbal particles are busy one of many kinds of elements that can influence the telicity of a sentence. They are not always necessary for a predicate to be telic, nor are they always sufficient. Further, they are not a marker of perfective aspect. I differ from Csirmaz only in terms of the lexical semantics proposed for the imperfective and perfective operators, for which I follow the analysis put forth in Deo (2009b) and revisited in Deo (2015).

2.5 Auxiliary verbs

The predominant view in the Hungarian literature is that there are approximately 11 auxiliary verbs in Hungarian which pattern together syntactically. The future-marking verb *fog*, a primary topic of Chapters 5 and 6, is often considered a member of this class. *Fog*'s status as an auxiliary has consequences for how it should be analyzed, so this section will look at what it means to be an auxiliary in Hungarian, and why we should think *fog* belongs to this class.

There is no single criterion defining auxiliary-hood in Hungarian. Kenesei (2001) uses the following list of properties adapted from Heine (1993) to point out that at least some of the verbs broadly considered to be auxiliaries in Hungarian exhibit each of these properties. Those properties Kenesei found to be irrelevant have been omitted, and the bold items are those Kenesei deems 'decisive' for Hungarian.

(30) **Properties of auxiliaries** (adapted by Kenesei 2001 from Heine 1993):[16]

a. Auxiliaries tend to provide for a small range of notional domains, especially for the domains of tense, aspect and modality [and possibly also] negation and voice.
b. They form a closed set of linguistic units.
c. They also occur as main verbs.
d. They express grammatical functions but exhibit, to some extent, a verbal morphosyntax.
e. **They [have] highly defective paradigms.**
f. **They may not be the (semantic) main predicate of the clause.**
g. They tend to be unstressed or unable to receive contrastive stress.
h. They tend to be cliticizable.
i. They carry all morphological information relating to the predicate.
j. **Auxiliaries may not themselves be governed by other auxiliaries.**
k. They do not have a meaning of their own, or do not contribute to the meaning of the sentence but rather are synsemantic or syncategorematic to the lexeme to which they apply.
l. They tend to occur separately from the main verb.
m. **Unlike verbs, they may not be nominalized or occur in compounds**
n. **In the presence of an auxiliary, the main verb is likely to be used in a nonfinite form[...]**

15 For an analysis of constructions like (28) that sticks to the particles-as-perfectivizers stance instead, see Kiefer (1994) and Piñón (1995).

16 Specifically, Kenesei simplified and reduced Heine's list.

The following is a list of auxiliaries from Kálmán, Prószéky, Nádasdy & Kálmán (1986). Those in bold are evaluated as auxiliaries by Kenesei (2001). So, each bold verb meets at least some of the above criteria, and all the above criteria are met by at least some of these verbs. Those marked with a * are archaic or obsolete according to Kenesei (2001).

(31) ***akar*** 'want to'
fog 'will'
kell 'have to' (impersonal)
szokott 'used to'
tetszik 'be pleased to'
tud 'can'
bír 'can'*
kezd 'begin'
kiván 'wish to'
lehet 'it is possible to; one can'
mer 'dare'*
méltóztatik 'be pleased to'*
óhajt 'desire'*
próbál 'try to'
***szabad*+copula** 'it is permitted to'
szándékozik 'wish to'*
szeretne 'would like to'
***szokás*+copula** 'it is usual to'
talál 'happen to'
tud 'know how to'

Most but not all auxiliaries can be inflected for person and number.[17] The exceptions include *kell* 'must', *szabad* 'may', *lehet* 'possible'. Although these verbs cannot take verbal person and number agreement suffixes, they do inflect for tense, as in (32).

(32) a. Context: I can't find my lunch in the fridge, so I hypothesize:

Lilla meg **kell-ett** enni a szendvics-et.
Lilla PART must-PST eat.INF the sandwich-ACC
'*Lilla must have eaten the sandwich.*'

b. Context: A friend asks about a book they lent me. I respond:

17 Infinitival verbs can also be (optionally) inflected for person and number when they occur with auxiliaries, as in (i) from Kálmán et al. (1986: 136).

(i) Context: I explain that my brother can't stay outside and play.

János-nak be **kell** menni-**e**.
János-DAT ILL must goINF-3SG
'*János must go in.*'

Also, auxiliary + infinitival verb constructions sometimes take dative rather than nominal subjects. This is a fairly restricted phenomenon and will not be crucial for anything in this work.

Nagyon **tetszett** nekem a könyv.
very be.pleasing.PST.3SG.INDEF DAT.1SG the book
'*I really liked the book.*'

c. Context: A friend comments on my early bedtime yesterday. I respond:

Tegnap reggel korán **kell-ett** kelnem.
yesterday morning early must-PST get.up.INF.1SG
'*I had to get up early yesterday morning.*'

d. Context: I try to get my friends to hang out with me on Friday:

Ki **akar** menni a moziba?
Who want.NPST.3SG.INDEF go.INF the movies.ILL
'*Who wants to go to the movies?*'

In sentences with complex verbs (verb + verbal particle), auxiliaries typically intervene between particles and verbs as in (33a), but the presence of focused elements, negation, wh-words, and other elements that prefer the preverbal position can cause alternate word orders to arise, such as that in (33b), in which the particle surfaces attached to the verb. In addition, negation and other scope-taking items can intervene between the auxiliary and main verb in order to reflect different scope patterns, as in (33d).

(33) a. Context: A friend explains why she isn't joining us for late drinks.

El **kell** alud-ni, mert holnap korán kell dolgoz-ni.
PART must.NPST sleep-INF, because tomorrow early must.NPST work-INF
'*I have to sleep, because tomorrow I have to work early.*'

b. Context: I respond jokingly to my friend's excuse:

Ki kell el-alud-ni, mert holnap korán kell dolgoz-ni.
who must.NPST PART-sleep-INF, because tomorrow early must.NPST work-INF
'*Who has to sleep because they have to work early?*' Wh-word

c. Context: I tell a friend that Thomas usually has a bedtime, but tonight he is off the hook.

Tamás **nem** kell alud-ni ma este.
thomas NEG must.NPST sleep-INF today evening
'*Thomas doesn't have to sleep tonight.*' $\neg\Box$

d. Context: I tell a friend that for a medical study, Thomas is required to stay up all night.

Tamás kell **nem** alud-ni ma este.
thomas must.NPST NEG sleep-INF today evening
'*Thomas has to not sleep tonight.*' $\Box\neg$

2.5.1 *Fog* as an auxiliary

Fog meets all the criteria in (30), and is considered to be an auxiliary verb by Kálmán et al. (1986) and Kenesei (2001). According to (30a), auxiliaries 'tend to provide for a small range of notional domains, especially... tense, aspect, and modality'. In Chapter 5, I propose an analysis of *fog* as a modal verb to capture its use as a marker of future temporal reference.

Kenesei (2001) sub-categorizes Hungarian auxiliaries based on the following properties.

(34) **Kenesei's categorizing properties for Hungarian auxiliaries:**

a. Does it lack the ability to be nominalized?
b. Does it fail to occur in nonfinite complements (i.e. in the infinitival)?
c. Does it fail to occur in any nonfinite form?
d. Does it have a deficient paradigm?

Kenesei (2001) considers those verbs which meet the above four criteria to be 'central'. *Fog* meets all of these criteria consistently. First, *fog* cannot be nominalized, as can some other possible auxiliaries:

(35) a. az uśz-ni **kiván-ás**
the swim-INF wish-NOM
'*the wish to swim*'

b. *az uśz-ni **fog-as**
the swim-INF FOG-NOM
Intended: '*the (will??) to swim*'[18]

Nor can *fog* occur in nonfinite complements, as in (36).

(36) a. 'Nem fog **bír-ni** úsz-ni'
NEG FOG.NPST.3SG.INDEF can-INF swim-INF
'*won't be able to swim*'

b. *'Nem bír **fog-ni** úsz-ni'
NEG can.NPST.3SG.INDEF FOG-INF swim-INF
Intended: 'cannot (will??) to swim'

Third, *fog* cannot occur in non-finite forms that non-auxiliaries like participles can occur in, as in (37).

(37) a. (i) az **olvas-ó** férfi
the read-APRT man
'*the reading man*'

(ii) az **olvas-ott** könv
the read-PPRT book
'*the read book*'

b. (i) *fog-ó
FOG-APRT

18 All the examples of *fog* having the properties in (34) are borrowed from Kenesei (2001).

??

(ii) *fog-ott
FOG-PPRT
??

Lastly, *fog* has a defective paradigm: it cannot take Past tense marking no matter the circumstances:

(38) Context: I tell a friend that János's plans for the weekend got derailed by a storm.

#János **fog-ott** úsz-ni (tegnap).
János fog-PST.3SG.INDEF swim-INF (tegnap)
Intended: '*János was going to swim.*'

This last point is particularly relevant. Many auxiliaries can take tense marking, as in the examples from Csató (1994: 239) in (39), which have past and non-past temporal reference, respectively. Further, most auxiliaries take the same inflectional person and number endings as other tensed verbs.

(39) a. Context: I explain why I was too tired to go out last night.

Tegnap reggel korán **kell-ett** kel-nem.
yesterday morning early KELL-PST get.up-INF.1SG.INDEF
'*Yesterday morning I had to get up early.*'

b. Context: I'm babysitting a child with special dietary needs. I tell the parents that I can cook while they are out.

Én meg **tud-om** főz-ni az ebéd-et.
I PART TUD-NPST.2SG.DEF cook-INF the lunch-ACC
'*I can make the lunch.*'

c. Context: I ask a friend what her plans are, now that a stressful day of work is over.

Most mit **fog-sz** csinál-ni?
now what.ACC FOG-NPST.2SG.INDEF do-INF
'*What are you going to do now?*'

Fog takes inflectional person and number suffixes as in (39c), but since *fog* is incompatible with past temporal reference and the Non-past marker is null, *fog* never takes overt tense morphology. Nevertheless, the fact that *fog* can take tense is corroborated in the literature, e.g. in Csató (1994).

In sum, there are good reasons to think that *fog* patterns like other auxiliary verbs: it has all the properties associated with them, both those proposed for cross-linguistic identification of auxiliary verbs by Heine (1993), and those claimed by Kenesei (2001) to be of particular relevance for Hungarian. §6 discusses how some auxiliaries in Hungarian, including *fog*, are modal. Chapter 5 provides a semantics for *fog* as an obligatorily future-referring modal verb.

Lexical *fog*

There is also a lexical verb *fog* in Hungarian that has a wide range of meanings, including but not limited to: hold, seize, take hold of, grasp, clutch, catch, keep, and hold back. Two examples of the possible uses of this verb are shown in (40). (40a) is from the novel Esti Kórnel by Kosztolányi, Dezső, and (40b) is from the children's storybook Minden Napra Egy Mese by T. Aszódi Éva.

(40) a. De ha **össze-fog-unk** mi ketten, én meg te, Kornél, akkor talán a
but if PART-hold-NPST.2PL.INDEF our pair, me and you, Kornél, then maybe the
közelébe érhetnénk
near.it.ILL get.POT.COND.2SG.INDEF
'*But if we two hold together, me and you, Kornél, then perhaps we could get near it.*'

b. A fiatal eszkimó azt hitte, ha fent volna a hegy tetején,
the young eskimo this believe.PST.3SG.DEF, if up were the mountain head.POSS.SUP,
meg tud-ná **fog-ni** a hold-at, és legurítgatná a völgy-be,
PART can-COND.3SG.INDEF grasp-INF the moon-ACC, and roll the hollow-ILL,
a falu-jába.
the village-POSS.ILL
'*The young Eskimo thought that if he were on top of the mountain, he could grasp the moon, and roll it downhill, into his village.*'

These lexical uses can be traced back approximately 800 years (Benko 1967), which is the same length of time for which there are available attested uses of *fog* for future marking. The historical research involved in developing a diachronic analysis of the uses of *fog* for future reference is beyond the scope of this thesis.

2.6 Modality

Modality is primarily expressed in Hungarian through the use of modal auxiliaries as in (41a), with modal adjectives as in (41b) from Körtvély (2009: 408), or with the suffixal possibility modal *ha(t)/he(t)* as in (41c) from Körtvély (2009: 406).

(41) a. Context: A friend asks where Mari is, and I report that based on what I know, I think she is at the work Christmas party.

Mari **kell** lenni a buli-ban most.
Mari must.NPST.3SG be.INF the party-INE now
'*Mari must be at the party now.*' Auxiliary

b. Tegnap tilos volt ki-menn**ünk** a kert-be
yesterday forbidden be.PST.3SG PART-go.INF.1PL the garden-ILL
'*Yesterday we were forbidden to go into the garden.*' Adjective

c. Ebbe a ház-ba akárki be-jö-**het**.
this.ILL the house.ILL anyone PART-come-MOD.NPST.3SG.INDEF
Anybody is allowed to come into this house.' Suffix

This section gives a brief overview of the modality contributed by auxiliaries, beginning with a short discussion of the aspects of modality that will be relevant for Chapters 5 and 6. The modal suffix and modal

adjectives are not central to the analyses herein.

2.6.1 Modality

Modality is a category of meaning that allows speakers to make reference to imagined possibilities, or options that are not known to be established facts about the real world at the time of speech. Following Kratzer (1981) and the rich body of literature that has emerged from Kratzer's ideas, I adopt the standard stance that modals can express either necessity or possibility, depending on their force (universal or existential).[19] This alone is not enough to capture the meaning of modals, because something can be necessary or possible not in an absolute sense, but relative to some particular set of facts. For example, 'must' has necessary force, but in (42a), Tom having read 3 books is necessary relative to his plans for book club, whereas in (42b), it is necessary relative to what I observe about his stack of books.

(42) Context: My friend knows my brother is endeavoring to read more. She asks if I know how it's going. I tell her:

a. Tom **must** have read 3 books this weekend, or else he will behind for the book club meeting.

b. Tom **must** have read 3 books this weekend, because he has 3 fewer books in his 'to read' pile.

The difference between (42a) and (42b) can be captured through differences between the modal base and ordering source. Specifically, 'must' in (42a) has a deontic flavour and 'must' in (42b) has an epistemic flavour. Kratzer (1981) and Kratzer (1991) propose two basic kinds of modal base: epistemic and circumstantial. An epistemic modal base is a set of propositions that are known by someone about the actual world, and the ordering source is typically stereotypical.[20] A circumstantial modal base is very general: it simply provides relativization to a set of facts, where the facts in question are largely determined by the ordering source, which can be (among others), deontic, teleological, or bouletic.

There are many flavours of modality because there are many respects in which something can be necessary or possible. Perhaps most commonly, modals are categorized based on whether they exhibit deontic or epistemic readings. For example, Portner (2009) classifies some English modal verbs in this manner, as in (43). As we saw with 'must' in (42), the same modal can have a different flavour in different contexts. This way of categorizing modals is useful for Hungarian as well.

(43) a. **Epistemic**: may, might, must, should, ought
b. **Deontic**: must, should, can, ought, may

Briefly exploring the modality exhibited by some Hungarian auxiliaries will give us a sense of the range of flavours that the verbs in this class can exhibit, and it sets the stage for a more in-depth discussion of *fog*'s modality in Chapter 5.

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19 Modals in English are divided based on force in the following way (Portner 2009):

(i) a. NECESSITY (□): must, should, would, will, shall
b. POSSIBILITY (◇): may, might, can, could

20 A stereotypical ordering source orders the worlds in the modal base by how well they meet expectations about what the actual world is like (Portner 2009).

2.6.2 Modal auxiliaries

Modality is one of the categories of meaning that auxiliary verbs tend to convey across languages (Heine 1993), including in Hungarian. Kenesei (2001) suggests that Hungarian auxiliaries can express modal meanings, and other authors have come to similar conclusions, including Körtvely, who argues in Körtvély (2009) that auxiliary verbs are one of the primary means of expressing modality in Hungarian:

> "...the following modal verbs will be investigated: *kell* 'must', *szabad* 'may be allowed', *lehet* 'be possible', *tud* 'can', *bír* 'can (physically)', *talál* 'might', *akar* 'want', *szeretne* 'would like'. In Hungarian... the category of modals is not a consistent and morphologically or semantically well definable group of verbs. *However,* the verbs listed above can be considered as the most frequently used verbs with a modal semantics..." (Körtvély 2009: 409)

The examples in this section show the auxiliaries mentioned by Körtvely exhibiting modal meanings.

Like many English modals, some Hungarian modal auxiliaries can express more than one type of modal meaning. For example, *tud* 'know' can be deontic as in (44a) from http://hunlang.wordpress.com/category/verbstensesmoods/, or it can express ability as in (44b) from Körtvély (2009: 404).

(44) a. Mit **tud** fel-hoz-ni mentségére?
what.ACC know.NPST.3SG.INDEF PART-bring-INF defence.3SG.POSS.SUB
'*What can he mention in his defense?*' Deontic

b. Amíg dolgozol, én meg **tudom** főz-ni az ebéd-et.
while work.NPST.2SG.INDEF, I PART can.NPST.1SG.DEF cook-INF the lunch-ACC
'*While you are working, I can make the lunch.*' Ability

Likewise, *kell*, meaning 'must' or 'is necessary', can express deontic or epistemic necessity, as in (45).

(45) a. Context: I tell my child that homework is not optional.

Kell csinalnod a hazi feladatokat!
must.NPST.3SG do.INF.2SG the home assignment.PL.ACC
'*You have to do your homework!*' Deontic necessity

b. Context: A friend asks where Mari is, and I report that based on what I know, I think she is at the work Christmas party.

Mari **kell** lenni a buli-ban most.
Mari must.NPST.3SG be.INF the party-INE now
'*Mari must be at the party now.*' Epistemic necessity

Other auxiliaries exhibit more restricted modal meanings, like *szabad* 'free', which can only convey epistemic modality, as in (46) from Körtvély (2009: 408).

(46) Tegnap Annának **szabad** volt
yesterday Anna.DAT free.NPST.3SG.INDEF be.PST.3SG
ki-menni/ki-menni-e a kert-be.
PART-go.INF/PART-go.INF-3SG.INDEF the garden-ILL

'*Anna was permitted to go out to the garden yesterday.*'

Authors are not completely consistent in their views on the range of modal flavours each auxiliary verb can express. Körtvély (2009) takes *lehet* 'may' to express epistemic but not deontic modality, while Kenesei (2001) argues that *lehet* is associated with deontic readings, and not epistemic. This is shown below in (47) with examples containing *lehet* from both works.

(47) a. Innen jól **lehet** lát-ni a hegy-ek-et.
from.here well is.possible.NPST.3SG.INDEF see-INF the mountain-PL-ACC
'*From here the hills can be seen well.*' Epistemic (Körtvély 2009)

b. A könyv-nek azért **lehet** kék-piros borítója (hogy nagyobb legyen
the book-DAT so may.beNPST.3SG.INDEF blue-red cover (that bigger be.COND
a bevétel-ünk).
the proceeds-POSS.1PL)
'*The book may (be allowed to) have a blue-and-red cover so our proceeds would be bigger.*'
Deontic (Kenesei 2001)

In sum, modal auxiliaries in Hungarian exhibit a range of modal meanings. Some express only one type of modal meaning (e.g. *szabad*), while others (e.g. *kell* and *tud*) can take different modal bases in different contexts. I suggest in chapter 5 that *fog* is a modal auxiliary verb that can only convey metaphysical modality, giving rise to obligatorily future-referring readings.

2.7 Summary

§2 of this chapter introduced the reader to some basics of Hungarian. §3 proposed lexical entries for the Past and Non-past in Hungarian as referential tenses based on Partee (1973) and Kratzer (1998). §4 looked at both lexical and grammatical aspect. I suggested, following Csirmaz (2004a), that Hungarian has covert aspectual perfective and imperfective operators, and that verbal particles are telicizing under some circumstances. §5 introduced the class of auxiliary verbs in Hungarian, to which *fog* belongs, and §6 gave an overview of modality conveyed by auxiliaries, as a set-up for the analysis of *fog* in Chapter 5.

Chapter 3

Éppen and aspect

3.1 Introduction

Hungarian has no fully dedicated, grammaticalized aspect markers. Utterances like (1) can therefore be ambiguous with respect to aspect, depending on the context of utterance.

(1) Lajos be-megy a varos-ba.
Lajos PART-go.NPST.3SG.INDEF the city-ILL
'*Lajos goes/is going/will go into the city.*'

In general, when no dedicated grammaticalized markers of tense and aspect are available, interlocutors can distinguish between readings that differ in terms of tense and aspect with the help of contextual cues and/or open category lexemes like temporal frame adverbs, as in the examples below.

(2) a. Context: A friend asks whether Lajos is working from home or the city office.

Mostanában Lajos be-megy a varos-ba.
these.days Lajos PART-go.NPST.3SG.INDEF the city-ILL
'*These days, Lajos goes into the city.*' Habitual

b. Context: A friend asks if Lajos has left for his trip.

Most Lajos be-megy a varos-ba.
Lajos PART-go.NPST.3SG.INDEF the city-ILL
'*Lajos is going into the city now.*' Ongoing

c. Context: I'm making plans with my friend Zsuzsa. I think she might want to join our mutual friend Lajos in New York, so I say:

Mít akar-sz csinál-ni holnap?
what.ACC want-NPST.3SG.INDEF do-INF tomorrow?
'*What do you want to do tomorrow?*'

Lajos be-megy a varos-ba.
Lajos PART-go.NPST.3SG.INDEF the city-ILL
'*Lajos is going/will go into the city.*' Future

Depending on the circumstances in which it is uttered, (1) could give rise to at least three aspectually distinct readings. If (1) is imperfective, an ongoing or a habitual reading is possible. If (1) is perfective, a 'simple' future reading is available.[1] In (2a), the ongoing and perfective future reading are ruled out by incompatibility with the quantifier *mostanában* 'these days', leaving only the habitual reading. In (2b), the ongoing reading is brought out by *most* 'now', and in (2c), the context includes the previously uttered sentence *Mít akarsz csinálni holnap?*, which sets the stage for a future-oriented reading. In all these cases, context and/or temporal adverbs serve to convey aspectual information in the absence of dedicated markers. This distinguishes Hungarian from the wide range of languages that rely on dedicated aspectual markers to convey temporal and aspectual information (Tonhauser 2015), e.g. Paraguayan Guaraní (Tonhauser 2011), Chinese (Lin 2006), Kalaallisut (Bittner 2005), and Yucatec Maya (Bohnemeyer 2009).

In this chapter, I will argue for the presence of an aspect-marking strategy in Hungarian somewhere in between the use of varied lexical items and dedicated grammaticalized markers. I suggest that there exists a discourse particle *éppen* that is used in certain contexts to mark aspectual distinctions. Like many other discourse particles across languages, *éppen* exhibits a wide range of uses. Unlike more familiar English discourse particles (e.g. English 'only' or it-clefts), *éppen* can freely combine with verbal and adjectival predicates to specify aspectual distinctions. The aspectual effects of *éppen* have long been noted in the Hungarian literature (see Harlig 1989, Kiefer 1994, Csirmaz 2006b, and É Kiss 2006b, a.o.), but have remained unexplained. With imperfective predicates, *éppen* gives rise to a restricted range of readings typically associated with progressive marking. With stative predicates, *éppen* gives rise to readings involving an implicature that the state holds temporarily. With perfective predicates, *éppen* conveys that the reference interval is no longer than the event's run-time. Examples of these effects are given in (3). The first example in each minimal pair is given without context to highlight the ambiguity.

(3) a. Imperfectivized dynamic predicate

(i) Lajos be-ment a varos-ba, amikor esett az eső.
Lajos PART-go.PST.3SG.INDEF the city-ILL, when fall.PST.3SG.INDEF the rain
'*Lajos went/was going into the city when it rained.*'

(ii) Context: I begin a story about Lajos's bad day in New York.

Lajos **éppen** ment be a varos-ba, amikor esett
Lajos ÉPPEN go.PST.3SG.INDEF PART the city-ILL, when fall.PST.3SG.INDEF
az eső.
the rain
'*Lajos was going into the city, when it rained.*'

b. Stative predicate

(i) A kavé drága.
the coffee expensive
'*Coffee is expensive.*'

(ii) Context: I tell a friend that a drought in some regions of Brazil has affected my cafe business.

1 The reasons why we can expect future temporal reference from a perfective Non-past sentence in Hungarian are treated in Chapter 5.

A kavé **éppen** drága.
the coffee ÉPPEN expensive
'*Coffee is expensive (just now/these days).*'

c. Perfectivized dynamic predicate

(i) János ki-fut-ott a torony-ból.
János PART-run-PST.3SG the tower-ELA
'*János ran out of the tower.*'

(ii) Context: I tell a friend that something weird happened last night. I was walking by the lighthouse. It started raining, and I heard big crashing noises...

János **éppen** ki-fut-ott a torony-ból.
János ÉPPEN PART-run-PST.3SG the tower-ELA
'*János ran out of the tower (just then).*'

The temporal clause in (3a) suggests an episodic reading. (3a-i) could give rise to an event-in-progress or a simple Past reading, depending on context. In (3a-ii), only an event-in-progress reading is available. In the stative example in (3b-ii), *éppen* indicates that the state of affairs is temporary, or subject to fluctuation. The perfective sentence in (3c-i) gives rise to a simple past reading, in which the event is asserted to hold in some reference interval prior to speech time. (3c-ii) can only give rise to a reading in which the event is asserted to hold precisely of a relatively short interval.

These effects of *éppen* are what I wish to account for in this chapter. I suggest that it is possible to account for the above patterns with a relatively simple semantics by explicating their interaction with properties of the predicates involved and the contexts of utterance. This analysis makes use of the framework developed in Beaver & Clark (2008) and later work for analyzing English discourse particles. In Chapter 4, I propose how this analysis can be extended to cover other, non-aspectual uses of *éppen*[2]

§2 introduces the primary set of data: imperfective sentences in which *éppen* limits possible readings to those associated with progressive markers. §3.1 reviews the analysis of imperfectives that I adopt from Deo (2015). §3.2 motivates the choice of the Beaver & Clark framework, and §3.3 provides the formal

2 Examples of the non-aspectual uses of *éppen* that will be accounted for in Chapter 4 are given in (i).

(i) a. Context: I tell a friend when she should be ready to leave for our trip.
Éppen négy-kor el-indul-junk.
ÉPPEN four-TEMP PART-set.out-SUBJ.NPST.1PL.INDEF
'*We should set out at exactly 4 o'clock.*' Precisification

b. Context: I look at an old map with a friend.
A varos **éppen** látható a térkérp-en.
the city ÉPPEN visible the map-SUP
'*The city is barely visible on the map.*' Margin reading

c. Context: I am making dinner plans with friends. János is very inconsistent with his diet choices, so I report his current habits.
János mostanában **éppen** eszik hús-t.
János these.days ÉPPEN eat.NPST.3SG.INDEF meat-ACC
'*János happens to be eating meat these days.*' Happenstance

tools required for the analysis, and §3.4 introduces the meaning of *éppen*. §4 and §5 extend the analysis to account for *éppen*'s effects in stative and perfective sentences, respectively. §6 briefly describes *éppen*'s interaction with patterns in Hungarian syntax, and §7 concludes.

Essentially, this analysis provides a unified account of *éppen* as a discourse particle with a wide range of seemingly disparate uses. The observation that a subset of these uses mark aspectual distinctions productively in the language can offer some insight into how tense and aspect categories are marked in languages with a dearth of dedicated, grammaticalized markers. Specifically, these facts and the analysis thereof offer a novel look at a method of aspect marking somewhere in between the idiosyncratic use of temporal adverbs and contextual cues, and the consistently required use of a fully grammaticalized dedicated aspect marker like, for example, the English Progressive 'be -ing'. Further, this work raises questions about the possible relationships between the ways that discourse particles comment on the question under discussion in a context, and how aspectual and temporal information is encoded in language.

3.2 *Éppen*'s effects in imperfective sentences

3.2.1 The pattern

Cross-linguistically, imperfective aspect is associated with at least the following three types of readings.

(4) a. Ági New York-ban lakik.
Ági New York-INE live.NPST.3SG
'*Ági lives in New York.*' Continuous

b. Mari (most) olvas.
Mari (now) read.NPST.3SG
'*Mari is reading (right now).*' Event-in-progress

c. Zsuzsa hús-t eszik.
Zsuzsa meat-ACC eat.NPST.3SG
'*Zsuzsa eats meat.*' Characterizing

For now, I will focus on event-in-progress and characterizing readings, which arise with eventive predicates. Characterizing readings include both habitual (delimited and non-delimited) and dispositional readings. The continuous reading, which arises in sentences containing stative predicates, is treated in §4.

The Progressive (e.g. English 'be + -ing') has been considered a subcategory of the imperfective (Comrie 1976 and Deo 2015, a.o.). In English, the Progressive is associated with at least the following two readings (e.g. van Hout 2006 Sharma 2009).

(5) a. John is running (right now). Event-in-progress

b. John is eating meat (these days). Delimited habitual

I will refer to these readings as 'progressive readings'.

Because Hungarian has no overt grammaticalized aspect markers, imperfective sentences containing eventive predicates can (unlike in English) be ambiguous with respect to the above aspectual distinctions, as illustrated by the examples from Hungarian in (6).

(6) Context: Mari is an avid runner, so I want to tell her what I just heard about János: 'Hey, did you

know...

János fut.
János run.NPST
'*János is running.*' Event-in-progress
'*János runs*.' Characterizing

When *éppen* is added to an imperfective sentence, only the event-in-progress and delimited habitual readings are available. That is, only those readings typically associated with the Progressive are available with *éppen*, as shown below. The context in (7b) is one in which the delimited habitual reading is much more salient than the event-in-progress reading. The non-delimited habitual reading is not possible, as shown in (7c).

(7) a. Context: Mari is an avid runner, so I tell her: 'Hey, did you know...

János **éppen** fut.
János ÉPPEN run.NPST
'*János is running.*' Event-in-progress
'*János is (habitually) running (these days).*' Delimited habitual

b. Context: János recently decided to begin eating meat. A friend is having a potluck, so I tell her about János's new diet:

János **éppen** eszik hús-t.
János ÉPPEN eat.NPST.3SG meat-ACC
'János is eating meat.' Delimited habitual

c. Context: A friend mentions that sometime in the past, my brother was strictly vegetarian. I disagree and say, 'You must have made a mistake...

#János **éppen** eszik hús-t.
János ÉPPEN eat.NPST.3SG meat-ACC
Intended: *'János eats meat.'* Habitual

The first aim of this chapter is to explain how this effect comes about.

3.2.2 Additional Notes

Temporal reference

Éppen's effect occurs irrespective of temporal reference. The same aspectual ambiguity arises in imperfective sentences with past and future temporal reference, as in (8b).

(8) Context: Mari is an avid runner, so I tell her: 'Hey, did you know...

a. János fut-**ott**.
János run-PST

'*János was running*.' Event-in-progress
'*János ran (habitually)*.' Characterizing

b. János fut-ni **fog**.
János run-INF FOG.NPST
'*János will be running (tomorrow at 3)*.' Event-in-progress
'*János will run (habitually)*.' Characterizing

As in the Non-past examples, *éppen* restricts the possible interpretations so that only an event-in-progress reading is available.[3]

(9) a. Context: Remember how János looked exhausted the other day? Turns out...

Éppen fut-ott.
ÉPPEN run-PST
'*He was running*.' Event-in-progress

b. Context: I found out why János will be late to the meeting...

Éppen fog fut-ni.
ÉPPEN FOG.NPST run-INF
'*He will be running (tomorrow at 3)*.' Event-in-progress

Telicity

The examples above all contain atelic predicates. Imperfective sentences containing telic predicates pattern similarly - such sentences are also compatible with both event-in-progress and characterizing readings, as in (10).

(10) Context: I want to give Mari more details about János's running, so I say:

János fut el a torony-hoz.
János run.NPST PART the tower-ALL
'*János is running (all the way) to the tower*.' Event-in-progress
'*János runs (all the way) to the tower (habitually)*.' Characterizing

As in the atelic examples, only the event-in-progress reading is available with *éppen*, as shown in (11).

(11) Context: I want to give Mari more details about János's running, so I say:

János **éppen** fut el a torony-hoz.
János ÉPPEN run.NPST PART the tower-ALL
'*János is running (all the way) to the tower*.' Event-in-progress

3 The delimited habitual reading is also technically possible, but with the given context and predicate, it is not salient.

3.3 The Semantics

3.3.1 The imperfective operator

I adopt a semantics for the imperfective operator from Deo (2009b, 2015). To capture the effect of the imperfective operator, we need to be specific about the temporal intervals under consideration. Deo's ontology includes a non-null set of intervals $\mathscr{I}$. These intervals are partially ordered by temporal precedence ($\prec$) and the subset (subinterval) relation ($\subseteq$). i, j, and k are variables over $\mathscr{I}$. The ontology also includes a non-empty set of worlds $\mathscr{W}$. Predicate instantiation for an imperfective sentence makes reference to the historical alternatives of a world w at an interval i (written $Hist_i(w)$). Historical alternatives are those worlds w' in which the course of history is identical to that in the world of evaluation (w) up until some time. Inertial alternatives are those possible trajectories past some time i that are compatible with the normal course of events up until i. The function *Inr*, given in (12), assigns to each $i \in \mathscr{I}$ this proper subset of $Hist_i(w)$ (Dowty 1979: 152 via Deo 2015). $Hist_{inr}(w)$ is the set of *inertial alternatives* of w at i.

(12) **Inertial alternatives**:
$Inr =_{def} f : I \rightarrow \wp(\mathscr{W})$
$i \mapsto Hist_{inr}(w) \subset Hist_i(w)$

Eventualities are either stative or eventive. The domain of eventualities $\mathscr{E}$ is sorted into these two sets: $\mathscr{E}^{\mathscr{E}}$ and $\mathscr{E}^{\mathscr{I}}$. Eventualities take time. The time that eventualities take (the run-time of an event) is represented with the temporal trace function τ from $\mathscr{E}$ to $\mathscr{I}$.

Aspectual operators like the imperfective may apply either to predicates of eventualities denoted by sentence radicals or to the predicates of intervals returned by aspectual modifiers (e.g. 'for 10 minutes'). They map properties of eventualities/intervals to sets of intervals, and return a function from world-time pairs to truth values. Tense is referential, and fills the interval argument returned by aspectual operators.

Instantiation of predicates at a time and world is specified in terms of the COINcidence relation, defined as in (13). A predicate of events $P^{\mathscr{E}}$ stands in the coincidence relation with an interval i and a world w iff there is a P event in every inertial alternative of w within or at some superinterval of i (this is captured with the temporal overlap relation $\circ$). A predicate of intervals $P^{\mathscr{I}}$ or of states $P^{\mathscr{S}}$ stands in the coincidence relation with i and w iff the predicate holds throughout i in w.

(13) $\text{COIN}(P,i,w) = \begin{cases} \forall w' \in Hist_{inr}(w) : \exists e[P(e)(w') \wedge \tau(e) \circ i] & \text{if } P \subseteq \mathscr{E}^{\mathscr{E}} \\ P(i)(w) & \text{if } P \subseteq \mathscr{I} \text{ or } \mathscr{E}^{\mathscr{I}} \end{cases}$

A regular partition is defined in (14). For any interval i, a partition of i is the set of non-empty, mutually exclusive, and collectively exhaustive subsets of i.

(14) **Regular Partition**:
$\mathscr{R}_i$ is a regular partition of i if $\mathscr{R}$ is a set of intervals {j,k...n} such that:
a. $\cup\{j,k...n\} = i$
b. $\forall j,k \in \mathscr{R}_i \rightarrow j \cap k = \varnothing$ if $j \neq k$
c. $\forall j,k \in \mathscr{R}_i \rightarrow \mu(j) = \mu(k)$ (where $\mu(x)$ stands for the Lebesgue measure of x)

Each subset of $\mathscr{R}_i$ will be of the same length, the measure of which is known as the partition measure. Intuitively, a regular partition of i is a set of non-overlapping segments of i that add up to the whole.

The operator IMPF combines with a predicate of eventualities or intervals P and an interval i, and returns the proposition that there is some (super)interval j that contains i such that every cell k in a regular partition $\mathscr{R}_j^C$ of j COINcides with P. The partition measure is determined by what is appropriate in a given context

and properties of the event description.

(15) IMPF: $\lambda P \lambda i \lambda w . \exists j [i \subseteq_{ini} j \wedge \forall k [k \in \mathscr{R}^c_j \rightarrow \text{COIN}(P,k,w)]]$

This definition of the imperfective operator predicts that event-in-progress and characterizing readings arise depending on the granularity of the partition measure relative to the length of j, i, and the length of the typical event's run-time, $\tau(e)$.

An example derivation is given in (16).

(16) a. János fut.
János run.NPST.3SG.INDEF
'*János runs/is running.*'

b. $[\![\text{john-run}]\!] = \lambda e [\text{john-run}(e)]$

c. $\text{IMPF}(\lambda e [\text{john-run}(e)])$
$= \lambda P \lambda i \lambda w . \exists j [i \subseteq_{ini} j \wedge \forall k [k \in \mathscr{R}^c_j \rightarrow \text{COIN}(P,k,w)]](\lambda e [\text{john-run}(e)])$
$= \lambda i \lambda w . \exists j [i \subseteq_{ini} j \wedge \forall k [k \in \mathscr{R}^c_j \rightarrow \text{COIN}(\lambda e [\text{john-run}(e)] k, w)]]$
$= \lambda i \lambda w . \exists j [i \subseteq_{ini} j \wedge \forall k [k \in \mathscr{R}^c_j \rightarrow \forall w' \in Hist_{inr}(w) \rightarrow \exists e [\text{john-run}(e)(w') \wedge \tau(e) \circ k]]]$

d. $\text{IMPF}(\lambda e [\text{john-run}(e)])(npst)$
$= \lambda w : i \subseteq [now, +\infty) . \exists j [i \subseteq_{ini} j \wedge \forall k [k \in \mathscr{R}^c_j \rightarrow \forall w' \in Hist_{inr}(w) \rightarrow \exists e [\text{john-run}(e)(w') \wedge \tau(e) \circ k]]]$

The output in (16d) says that there is some superinterval of i called j, and every cell k of a regular partition of j overlaps with at least part of an interval of János running.

Characterizing readings arise when the reference interval is long relative to the run-time of the typical event in a predicate P. Characterizing readings come in two subtypes, so to speak.

When the reference interval is long enough to contain multiple P events, a habitual reading can arise. For example, the context in (17) provides a reference interval that is long relative to a single, typical event of piano-playing.

(17) Context: I am writing a school report on how my family usually spends our time in the evenings. I say:

János zongorázik.
János play.piano.NPST
'*János plays the piano.*'

Each cell k of j overlaps with some event of János playing the piano. The RI is long relative to both the run-time and the partition measure, so the RI contains multiple János-play-piano events, as indicated by the broken yellow bar in the graphic below.

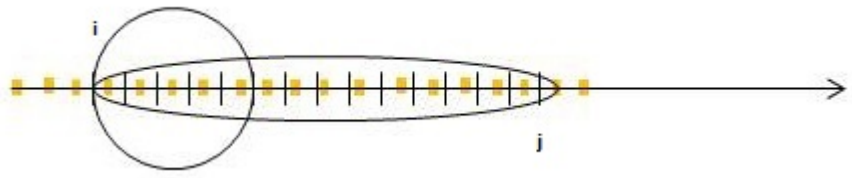

Figure 3.1 Habitual reading

When each cell of the partition measure is longer than the RI but the run-time is still relatively short, a dispositional reading can arise. Let's take the following example, in which the context provides an RI and partition measure that are both long relative to the run-time of a meat-eating event.

(18) Context: János recently decided to begin eating meat. A friend is having a potluck, so I tell her about János's new diet:

János hús-t eszik.
János meat-ACC eat.NPST.3SG.INDEF
'*János eats meat.*'

It is not necessary that János have actually eaten meat during *i*. That is, so long as every *k* overlaps with a meat-eating event, there need not be a meat-eating event in *i* for *P* to be true. This is illustrated in the graphic below, where the relatively long partition measure is indicated with vertical lines.

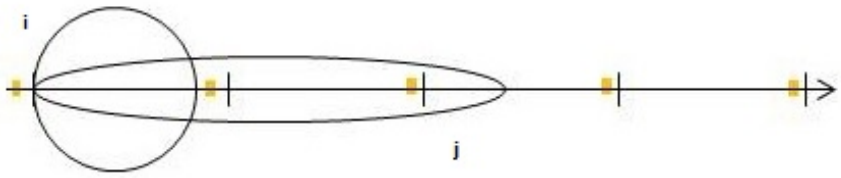

Figure 3.2 Dispositional reading

The difference between the English Progressive and the imperfective operator is that with the Progressive, the domain of quantification is a partition over the reference interval (*i*) itself rather than a superinterval thereof (*j*). Thus with the Progressive, $i = j$ (Deo 2015). This difference underlies the association of the English Progressive with a subset of the readings associated with imperfectives across languages.

Event-in-progress readings arise when the reference interval is short relative to the typical run-time of the kind of event in question. For example, the following context provides the reference interval *i* 'now', which is short relative to the length of time for which individuals usually run (e.g. longer than a moment).

(19) Context: 'What is János doing right now?'

János fut.
János run.NPST.3SG.INDEF
'*János runs/is running.*'

Thus, the event of János running extends throughout *i*, *j*. This is shown in the diagram below, in which the temporal trace (run-time) of the event is indicated with a yellow bar.

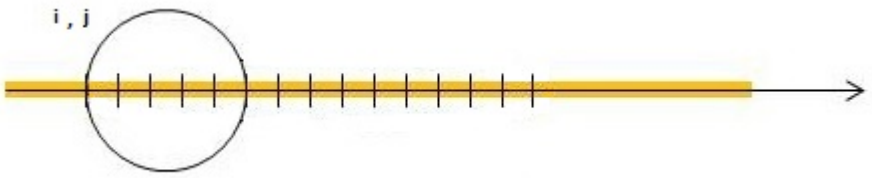

Figure 3.3 Event-in-progress reading

Delimited habitual readings, like other characterizing readings, arise when the reference interval is long relative to the typical run-time of the kind of event in question. Unlike with other characterizing readings, $i = j$. That is, the reference interval contains multiple instances of the event, but these do not (necessarily) extend beyond the bounds of reference interval i, as in the example in (20).

(20) Context: János recently decided to begin eating meat. A friend is having a potluck, so I tell her about János's new diet:

János éppen hús-t eszik (mostanában).
János ÉPPEN meat-ACC eat.NPST.3SG.INDEF (these.days)
'János is eating meat (these days).'

In (20), there must be an event of János eating meat in every cell k in i, but there need not be events of János eating meat outside the bounds of the reference interval. This distinguishes the delimited habitual from other characterizing readings. The diagram below illustrates the relationship between the RI, run-time, and partition measure for this reading.

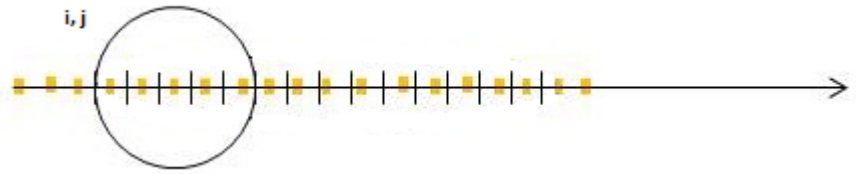

Figure 3.4 Delimited habitual reading

On the above analysis, progressive readings arise when i equals j. The use of *éppen* gives rise to readings that are associated with the use of the Progressive in English. I suggest *éppen*'s effect can be understood as restricting the set of possible interpretations of imperfective sentences to just those in which i is equal to j.

3.3.2 Motivations

This chapter and the next use the analytical tools built in Beaver & Clark (2008) and developed further in Coppock & Beaver (2010), Coppock & Beaver (2011), Velleman, Beaver, Destruel, Bumford, Onea & Coppock (2013), and Coppock & Beaver (2013) to account for *éppen*'s effects. For Beaver & Clark, the function of focus-sensitive discourse particles is analyzed in terms of the constraints they place on the properties of the Current Question (CQ) in a given context. The authors engaged in using this framework have proposed compelling analyses of a wide variety of English discourse particles, including exclusives

like 'only', 'just', 'solely', and 'merely', additives like 'too', scalar additives like 'even', intensifiers like 'really', particularizers like 'specifically', and downtoners like 'barely' and 'at most'. The Beaver & Clark framework has also been extended to account for both semantic and syntactic properties of other discourse constructions in later works, e.g. the behaviour of it-clefts as it compares to 'only' in Velleman et al. (2013), and the distribution and meaning of 'exclusive', 'sole', 'pure' and many other additional exclusives in Coppock & Beaver (2013). The works in this tradition aim to account for how many (if not all) exclusives and discourse particles can modify expressions of various types. This is a promising avenue for an account of *éppen*'s effects because it provides a way of getting at the diversity of expressions that *éppen* is associated with, and hence the diversity of interpretations that arise.

The tools developed in this body of literature are well-suited for the task of capturing *éppen*'s meaning, although at first glance it may not seem that a framework developed for treating discourse particles is ideal for analyzing what appears to be an optional or emerging aspectual marker in the language. However, *éppen* does not behave like well-studied dedicated aspectual markers such as the English Progressive. *Éppen* exhibits non-aspectual uses and gives rise to a range of aspectual readings when it occurs with different predicate types. A standard analysis of *éppen* as the overt morphological realization of a single aspectual operator (a function from a predicate of events or intervals to a predicate of intervals) would not account for this data. It would be tricky, at best, for *éppen*'s multiple, distinct aspectual effects to be captured with such a lexical entry, let alone its non-aspectual effects with other predicate types.

With that said, there are attested cases of aspectual markers that can give rise to multiple aspectual effects: the Japanese *-te iru* form gives rise to either ongoing or resultative readings depending on the lexical aspect of the predicate (though it does not, to my knowledge, give rise to any non-aspectual readings). Accounting for these effects has required an analysis claiming that *-te iru* is composed of two separate morphemes: *-te*, which has been compared to the English Perfect, is claimed to sometimes not contribute any meaning, and it is by way of this +/- Perfect feature that two distinct aspectual readings can arise (Ogihara 1998). Thus it would appear that even for aspectual markers that aren't associated with as wide a range of readings as *éppen*, it is not trivial to provide a unified account of distinct, incompatible aspectual readings using the standard approach for aspectual operators.

Éppen's non-aspectual uses are what provide a clue that analyses of discourse particles might be fitting. In most of its non-aspectual uses, *éppen*'s effects are similar to those of precisifiers like English 'exactly' or 'precisely'. Some evidence for this comes from an unlikely source: *éppen* is usually translated in Hungarian-English dictionaries using English exclusive 'just'.[4]

Like *éppen*, 'just' can give rise to precisifying readings, as in (21).

(21) a. The floral department is **just** over there by the produce.

b. The taxi arrived **just** at 9.

c. The clothes **just** fit in the dresser.

d. The chicken **just** made it across the road.

Like *éppen*, discourse particles (like 'just', and precisifiers like 'exactly') often occur with a wide range of expressions, and give rise to multiple readings. This parallel suggests that analyses of discourse particles might offer a way of accounting for *éppen*'s effects.

With that said, the challenge here is still to not only unify the seemingly diverse effects associated with éppen under one umbrella, but also to justify the treatment of traditionally unrelated linguistic functions as

4 E.g. Tamás (1998) and http://szotar.sztaki.hu/english-hungarian

being associated with a discourse particle and its semantics. To my knowledge, aspect marking has not ever been treated as a function of a discourse particle, but I will argue here that the aspectual effects of *éppen* can be accounted for through just such a model using the Beaver & Clark framework, where we can account for the pattern of *éppen*'s use through specifying the kinds of questions it can comment on, but still find a common thread through all *éppen*'s uses: they all involve questions about intervals that can be ordered by a subinterval relation.

3.3.3 Meaning of éppen

Set-up

The Beaver & Clark tradition proceeds from a general understanding of discourse as a way of gaining insight into the world we live in, where an increase in knowledge of the world arises through continual elimination of possibilities. We can explain this process by viewing discourse as a series of questions and answers, sometimes explicit but often not. These questions are often referred to as the question under discussion (QUD) or the current question (CQ), and they serve to guide interlocutors in determining what information is relevant to a given situation. Assertions are taken to be answers to some QUD, and by providing an answer to the QUD, they eliminate other possible answers. This elimination of possible answers gives interlocutors a way to update what is in the common ground, and it is through this process that interlocutors' mutual understanding of the world evolves.

The context and CQ can be formalized in the following way, which is largely borrowed from Coppock & Beaver (2013) but stems from a rich tradition comprising their earlier work and that of others (Stalnaker 1978, Hamblin 1971, Groenendijk & Stokhof 1984, Rooth 1985, Ginzburg 1996, Roberts 1996, a.o.).

I adhere to the standard assumption that a context S, or information state, provides a common ground CG, which is a set of propositions (i.e. a set of sets of worlds). Following Coppock & Beaver (2013: 23), I take S to provide a current question CQ_s, which is a set of alternatives. This set of alternatives comprises a subset of the propositions contained in CG. Finally, S also provides a partial ordering over the alternative set, $\geq_S$. The CQ in a state S can be defined as the set of possibilities ordered by the relation $\geq_S$:

(22) **CQ of a state** S: $\text{CQ}_S = \{p \mid \exists p' [p \geq_S p' \vee p' \geq_S p]\}$

I follow Beaver & Clark (2008) via Coppock & Beaver (2013: 23) in defining the information content of S, S^*, as the union of all the possibilities in the CQ_s.

(23) **Informational content of a state**:
If S is a state, then the informational content of S is $S^* = \cup\text{CQ}_S$

The informational content is therefore is a set of possible worlds in which the propositions in the alternative set are true. Presuppositions are evaluated with respect to this set of possible worlds.

So for example, if we have the question, 'Who is coming?' we might have the following possible answers (and labels for convenience) in the alternative set:

(24) a = Bob is coming.
b = Ashwini is coming.
ab = Bob and Ashwini are coming.

The CQ would then be the following set:

(25) $\text{CQ} = \{a, b, ab\}$

For *éppen* as well as for discourse particles analyzed in the Beaver & Clark framework, the ordering relation $\geq_s$ is a 'strength' relation based on entailment, where if x entails y, then x is stronger than y. For some exclusives, like *merely*, the strength ranking is based on a parameter that is different than just entailment, but for *éppen*, entailment is sufficient. Note, though, that entailment relations can hold between values along many different kinds of dimensions. This will prove crucial for the flexibility that *éppen* exhibits in its non-aspectual uses, and will be discussed in Chapter 4. The entailment-based strength ranking means that in our example alternative set, *a* and *b* are unranked with respect to each other, and *ab* is stronger than both. This gives us the following partial order:

(26) $\geq_s = \{\langle ab, a\rangle, \langle ab, b\rangle, \langle a, a\rangle, \langle b, b\rangle, \langle ab, ab\rangle\}$

Below is a more visual representation from Coppock & Beaver (2013: 23) in which arrows represent the entailment relations. Each alternative entails itself, and *ab* entails both *a* and *b*, which do not entail each other.

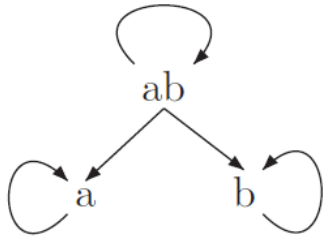

Figure 3.5 Alternative set entailment relation

In this example, *ab* is the strongest alternative. I will suggest that the kinds of contexts that provide a CQ containing a single strongest alternative are be the kinds of contexts in which *éppen* can be used.

I take *éppen* to be conventionally focus-sensitive, like exclusives and other discourse particles. That is, *éppen*'s focus-sensitivity is an intrinsic part of its lexical meaning (Beaver & Clark 2008). This does not mean that the meaning proposed for *éppen* makes direct reference to focus or to a focused element. Rather, *éppen*'s meaning makes direct reference to the CQ, and the relationship between the CQ and focus means that *éppen* is focus-sensitive only via the CQ. The focus-sensitivity of discourse particles like *éppen* is therefore not tied to how focus is determined in the language. The relationship between the CQ and focused elements is defined with the Focus Principle, adopted from Coppock & Beaver (2013: 25).

(27) **Focus Principle**:

a. Some part of a declarative utterance should give an answer the CQ.

b. If Q is a set of Rooth-Hamblin alternatives[5], and A is a natural language expression, then A gives an answer to Q if the focus value of A is a subset of Q.

(27a) allows the answer to the CQ to be an embedded clause. We want a relationship between assertions and questions that allow for sentences like 'I think Mari is coming' to be felicitous answers for questions like

5 The term 'Rooth-Hamblin' alternatives, which is used in Beaver & Clark (2008) and subsequent work, refers to a view of questions proposed in Hamblin (1971) as denoting sets of true possible answers where the members are propositions that resemble the question in every way, but the WH-word is replaced with the name of an individual. This approach is combined with some features from the Alternative Semantics of Rooth (Rooth 1985, Rooth 1992), in particular the addition of conjunctions to the alternative set. That is, members of the alternative set resemble the question in every way but the WH-word is replaced with the name of an individual or a conjunction of names of individuals.

'Who is coming?'. (27b) clarifies what it means to provide an answer to a question. That is, the focus value (the focused element in an assertion) is required to be part of the question. Note that Q is any question, whether explicit or implicit, and the CQ is just a specific subset of this set of questions. That is, the CQ is the question that is provided by a given context. Any unfocused part of a declarative utterance has as its alternative set just the singleton set containing its semantic value. The focused portion of a declarative utterance corresponds to alternatives of the same semantic type as the focused element. So, the Focus Principle establishes a subset relation between a question and answer pair. This is crucial in accounting for embedded answers and cases where the alternative set of the focused element includes members that aren't specifically included in the question (Beaver & Clark 2008: 48). In the case of the CQ, the question may not be explicit, but the relationship between the answer and question is the same as with explicit question and answer pairs.

Lexical entry

Éppen is an inquiry-terminating construction that comments on answers to the Current Question (CQ). The meaning of *éppen* consists of two parts:

- **Presupposition:** There exists a unique strongest true alternative in the CQ.
- **Assertion:** The prejacent is that alternative.

Formally, this can be represented as follows:

(28) a. **Presupposition:** $\text{STR}_s = \lambda w.\exists p' \in \text{CQ}_S[p'(w) \wedge \forall p'' \in \text{CQ}_S[p''(w) \rightarrow p' > p'']]$
b. **Assertion:** $\text{IDENT}_s = \lambda w.\forall p'[p'(w) \rightarrow p' = p]$

(29) $[\![\textit{éppen}]\!] = \lambda p\,.\,\lambda w : \text{STR}_s(p)(w)\,.\,\text{IDENT}_s(p)(w)$

Éppen applies at the proposition level. Thus, an alternative p is the strongest among a set of alternatives iff for all p' in that set of alternatives, the set of worlds in p is a proper subset of the set of worlds in p'.

Éppen is used to convey increased precision. On this analysis, entailment corresponds to precision. That is, the strongest alternative in an entailment-based strength ranking is the most precise. By identifying the prejacent as the strongest true alternative, *éppen* conveys that what is expressed by the prejacent is the most precise answer that the speaker can provide in the given context.

For any predicate of eventualities P, let j be the interval over which P is asserted to hold. I suggest that the aspectual effects of *éppen* arise when the alternatives in the CQ can be understood to vary with respect to the value of j.

As with locations, times, and measurements, the use of *éppen* signals that the CQ is constrained to be one in which precision-based construals of some interval are introduced (either overtly or covertly) by some expression in the prejacent. When *éppen* gives rise to aspectual effects, the alternatives that *éppen* considers are alternative interpretations of the same syntactic string: *éppen* is felicitous when the interval in question is the interval over which P is asserted to hold. The strongest, true alternative offers the most precise construal of this interval.

The meaning of *éppen* in (27) is not enough to capture the difference between *éppen*'s effects and the effects of other precisifiers. For example, neither the Hungarian precisifier *pontosan* nor English 'exactly' can be used with verbal predicates to restrict aspectual interpretations.[6] If they could, we might expect

6 However, the short form of *pontosan*, *pont*, also meaning something like 'exactly', does show a range of effects similar to *éppen*. I leave an analysis of *pont* for future work, but we can surmise that *pont* places similar requirements on the CQ. In future work, I would like to evaluate the extent to which the way that *éppen* comments on the CQ is a property of precisifiers in general.

them to be felicitously used in an imperfective sentence giving rise to an event-in-progress reading, as in (30). Instead, they are marginal. At best, they suggest a reading in which the activity in question varies across alternatives rather than the time at which P is asserted to hold.

(30) Context: Mari is an avid runner, so I tell her: 'Hey, did you know...

a. #János **pontosan** fut.
János exactly run.NPST.3SG
Intended: '*János is running.*'

b. #John **exactly** runs.

Further, *éppen* is not able to be used in some kinds of contexts in which 'exactly' and *pontosan* are felicitous, as in (31).

(31) Context: I asked my friend if the can of juice fit in the glass, and she said yes:

a. A pohár **pontosan** tele volt.
the glass exactly full be.PST.3SG
'*The glass was exactly full.*'

b. #A pohár **éppen** tele volt.
the glass ÉPPEN full be.PST.3SG
Intended: '*The glass was exactly full.*'[7]

Coppock & Beaver propose that differences in meaning between individual exclusives can be in part attributed to the fact that they answer different questions.[8] I propose that some of the differences between the meanings of precisifiers can be captured in the same fashion. I propose that *éppen* answers the question 'Over precisely what interval does p hold?'. Let $\textsc{precise}(j)$ be the level of precision of an interval. If $P(i)$ and $P(i')$ are two answers to the question $?i[P(i)]$, then it should hold that in general, if $P(j)$ and $P(k)$ then $\textsc{precise}(j) > \textsc{precise}(k)$.[9] Let us use PRECISE to signify that a scale has this property. Then the lexical entry for *éppen* can be the following.

(32) $[\![\textit{éppen}]\!] = \lambda p\,.\,\lambda w : \text{CQ}_s \subseteq ?\text{i}[\text{P(i)}] \wedge \textsc{precise}(\geq_s) \wedge$
$\textsc{str}_s(P(i))(w)\,.\,\textsc{ident}_s(P(i))(w)$

The 'core' meaning of *éppen* might be similar to other precisifiers: it presupposes that there is some

7 Note that *éppen* is fine here if the temporal contingence reading, '*The glass was full just then.*' is intended.

8 For example, Coppock & Beaver suggest that 'mere' answers the question, 'What properties does x have?' and ranks answers based on their power over individuals, whereas adjectival 'only' answers the question 'What things have property x'. Examples from Coppock & Beaver (2013: 37, 40).

(i) a. My new job will start a **mere** few weeks after the contract arrives.
b. More than a **mere** iPhone case. Every bit as luxe as it looks.
c. Cajun food is not a **mere** fad.
d. **Only** Jane is a teacher.

9 I am abstracting away from how predicates are instantiated in time for the sake of simplicity.

strongest, true alternative and asserts that the prejacent is this alternative. The fact that *éppen* presupposes a question about how precise the interval for which some property holds is what distinguishes it from uses of 'exactly', *pontosan*, and other precisifiers which are not limited to occurring with intervals and do not give rise to aspectually restricted readings.

Application to eventive sentences

Imperfective sentences containing eventive predicates introduce an interval j that is a superinterval of the reference interval i. For any predicate of eventualities P, IMPF(P) asserts that P is distributed over j. The presence of *éppen* in imperfective sentences constrains the CQ to alternatives that vary with respect to the construal of j.

Éppen presupposes that there is a unique strongest alternative in the CQ. In this case, such a CQ is one in which the alternatives vary with respect to how precisely j is construed. There are two relevant possibilities for the construal of j which are in an asymmetric entailment relation:

(33) CQ = {a,b}

a. $\{ w \mid i \subseteq [now, +\infty). \exists j [i \subseteq_{ini} j \wedge \forall k [k \in \mathscr{R}^c_j \rightarrow \forall w' \in Hist_{inr}(w) \rightarrow \exists e [P(e)(w') \wedge \tau(e) \circ k]]] \}$

b. $\{ w \mid i \subseteq [now, +\infty). \exists j [i = j \wedge \forall k [k \in \mathscr{R}^c_j \rightarrow \forall w' \in Hist_{inr}(w) \rightarrow \exists e [P(e)(w') \wedge \tau(e) \circ k]]] \}$

Of these two alternatives, (33b) is the stronger, because the proposition in (33b) entails that in (33a). That is, the set of worlds in (33b) is a proper subset of the set of worlds in (33a). All worlds in which P overlaps with every cell k in the partition measure $\mathscr{R}^C_j$ where j is equal to i are necessarily also worlds in which P overlaps with every cell k in $\mathscr{R}^C_j$ where $i \subseteq_{ini} j$.

Recall that *éppen*'s assertive component identifies the prejacent as the strongest, true alternative. When *éppen* is used in a context producing a CQ like that in (33), *éppen* asserts that the prejacent should be interpreted as in (33b), the stronger alternative.

The effect of *éppen*'s presence on the sentence's interpretation is to restrict the possible readings of an imperfective sentence to those that correspond to the strongest construal of j (which is identifying j with the reference interval i). These are exactly the readings associated with the English Progressive.

This accounts for *éppen*'s behaviour in imperfective sentences like the following. Without *éppen*, the sentence can give rise to either reading associated with the imperfective: event-in-progress or characterizing. With *éppen*, as in (34b), only the readings associated with the Progressive are available: the event-in-progress reading and delimited habitual reading.

(34) Context: Mari is an avid runner, so I tell her: 'Hey, did you know...

a. János fut.
János run.NPST
'*János is running.*' Event-in-progress
'*János runs.*' Characterizing

b. János **éppen** fut.
János ÉPPEN run.NPST
'*János is running (just now).*' Event-in-progress
'*János is running (habitually) (just now).*' Delimited habitual

The delimited habitual reading may be less salient than the event-in-progress reading in this context.

3.4 Statives

Sentences containing non-dynamic stative predicates are associated with the continuous reading (mentioned in §2). With statives, *éppen* gives rise to an inference of 'temporal contingence': the sense that the state holds only of a relatively short interval, or temporarily.[10]

(35) Context: My sister and I are visiting New York. I ask my sister if we know anyone in New York. She says:

a. Mari NY-ban lakik.
Mari NY-INE live.NPST.3SG.INDEF
'*Mari lives in NY.*'

b. Mari **éppen** NY-ban lakik.
Mari ÉPPEN NY-INE live.NPST.3SG.INDEF
'*Mari is living in NY (just now).*'

If the state in question is difficult to construe as holding temporarily, *éppen* is marginal, as in (36).

(36) ?János **éppen** tud franciául.
János ÉPPEN know.NPST.3SG.INDEF French
Intended: '*?János is knowing French (just now).*'

As is evident from (36)'s English translation, the English Progressive has a similar effect to *éppen* when it occurs in stative sentences.[11]

Given that in eventive imperfective sentences *éppen* has an effect similar to that associated with the Progressive, it is not surprising that it seems to do something similar with stative imperfective sentences. I suggest that *éppen*'s function can be analyzed similarly in eventive and stative sentences: *éppen* gives rise to the temporal contingence inference with statives due to how the entailment relation between alternative construals of j interacts with stative predicates and resulting pragmatic implicatures.

I will go through the analysis of *éppen*'s effects in stative sentences because the entailment relations and the mechanisms involved in producing the available readings differ from those in eventive sentences. Specifically, the effect of *éppen* arises because of inferences associated uniquely with stative sentences.

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10 Larry Horn (p.c.) points out that an utterance of (35b) can give rise to the additional implicature that all the speaker knows is that Mari is living in NY for a short time: if the speaker knew Mari was living in NY for a longer interval, she would have uttered (35a).

11 Thanks to Zoltán Szabó and Larry Horn (p.c.) for contributing to the observation that the infelicity of both the English and Hungarian cases is variable. In Hungarian, one can add a temporal frame adverb like *mostanában* 'these days', and the utterance becomes plausible if one can imagine a context in which János learns and forgets French many times (short term memory loss?). This does not seem to work so well in English, but 'János knows French just now/these days' is perfectly fine. This raises questions about the difference in behaviour between the Progressive and *éppen* with statives, and why they interact differently with temporal frame adverbs. This may be a possible avenue for future research.

3.4.1 Properties of stative sentences

There are two crucial differences between eventive and stative sentences that influence *éppen*'s effect on stative predicates.

First, although stative sentences are a subtype of imperfective sentences (and so involve the imperfective operator in (15)), stative predicates are instantiated differently than eventive predicates. This is captured with the COINcidence relation, repeated here in (37), according to which a stative predicate P COINcidences with i in a world w if P holds throughout i in w.

(37) $$\text{COIN}(P,i,w) = \begin{cases} \forall w' \in Hist_{inr}(w) : \exists e[P(e)(w') \wedge \tau(e) \circ i] & \text{if } P \subseteq \mathscr{E}^{\mathscr{E}} \\ P(i)(w) & \text{if } P \subseteq \mathscr{I} \text{ or } \mathscr{E}^{\mathscr{I}} \end{cases}$$

This differs from the way eventive predicates are instantiated: with stative predicates, discontinuous P intervals (as give rise to characterizing readings) in j are ruled out. In other words, every subinterval of j must be a subinterval at which P holds. So, the alternative set for a stative utterance might look something like that in (38).

(38) CQ= { a, b }

a. $\{ w \mid i \subseteq [now, +\infty). \exists j [i \subseteq_{ini} j \wedge P(j)(w)] \}$

b. $\{ w \mid i \subseteq [now, +\infty). P(i)(w) \}$

Because discontinuous P intervals are ruled out, if P holds of some j that is a superinterval of i, then P must also hold continuously of i itself. Further, all worlds in which P holds of i are also worlds in which $P(j)$ where $i \subseteq_{ini} j$ is true. In other words, (for example) if Mari lives in New York from 2015-2016, then she also lives in NY for all parts of that year, and since i is any initial interval of j, one possibility is that i is equal to j. The upshot of this is that the alternatives in (38) entail each other: both alternatives are true, and there is no strongest alternative.

The second difference between stative and eventive sentences that impacts *éppen*'s use is what I will call the superinterval implicature:[12]

(39) **Superinterval implicature:** If a stative predicate P is asserted to hold at some interval j, then a conversational implicature arises that there is some j' such that j is contained in j' and P holds of j'.

This captures the intuition (noted by Dowty 1986, Kamp & Reyle 1993, and Lascarides & Asher 1993, among others) that stative predicates are by default expected to hold beyond the reference interval. So, the default interpretation of a non-dynamic stative sentence is that P holds of some j' that is longer than j. The analysis of *éppen*'s effect on statives hinges on this property.

12 Adapted from Gennari (2003). Gennari captures the 'superinterval property' as in (i). **P** represents the modal operator possibility, *st* is the speech time, and i_s is a superinterval.

(i) John will be at home.

a. $\exists i[i > st \;\&\; \text{be-at-home}(j)(i)]$

b. $\exists i_s[\exists i[i > st \;\&\; i \subset i_s \;\&\; \text{be-at-home}(j)(i_s)]]$

$\exists i_s[\exists i[i > st \;\&\; i \subset i_s \;\&\; \text{be-at-home}(j)(i_s) \;\&\; \mathbf{P} st \subset i_s]]$

(ia) says that there is some interval i after the speech time at which be-at-home holds. (ib) says that there is some proper superinterval of i of which be-at-home also holds. (ib) highlights that the superinterval i_s in (ia) allows for the speech time to be contained in or overlapping with i_s. Whether the overlapping or future reading obtains depends on the reference interval and our knowledge of the typical duration of the state involved.

3.4.2 Analysis

If the alternatives proposed above are right, *éppen*'s felicity conditions are not met (because there is no strongest true alternative). Since *éppen* is nonetheless felicitous, it must be the case that the prejacent has (possibly pragmatically enriched) interpretations that can be ordered with respect to their strength.

(40) Context: My sister and I are visiting New York. I ask my sister if we know anyone in New York. She says:

Mari **éppen** NY-ban lakik.
Mari ÉPPEN NY-INE live.NPST.3SG.INDEF
'*Mari is living in NY (just now).*'

I propose that if we take the contribution of the superinterval implicature into consideration, *éppen*'s effect in stative sentences can be explained by reasoning through the pragmatic inferences involved.

Let's go through what might happen when a speaker utters a stative sentence containing *éppen*, as in (40).

(41) a. STEP 1: The hearer had asked the speaker for information: whether they know anyone in New York. In response, she uttered a stative sentence containing *éppen* about Mari living in NY.

b. STEP 2: The hearer assumes that the speaker is rational and cooperating in the conversation, so her response must satisfy the maxims of quantity and manner.

c. STEP 3: The speaker's response contains *éppen*, meaning that the speaker presupposes that there is a strongest true alternative. However, this presuppositional requirement is not satisfied by the alternatives in (38), because neither semantically possible reading of the prejacent is stronger than the other.

d. STEP 4: The speaker is therefore probably construing the alternatives differently. Whence the difference?

e. STEP 5: It is part of the common ground that the use of the prejacent (without *éppen*) would trigger the superinterval implicature (that Mari lives in NY for some proper superinterval of j) because of the predicate's stativity. That is, the default interpretation of a non-dynamic stative sentence without *éppen* is one in which the superinterval implicature arises.

f. STEP 6: The alternatives in the CQ can be recast such that the information contributed by the superinterval implicature is included. If the superinterval implicature is accepted, there is no longer a possible interpretation of p such that $i \subseteq_{ini} j \wedge P(j)(w)$. Rather, it must be the case that $i \subset_{ini} j$. So, the default interpretation of a stative sentence without *éppen* is as in (41f-i). (41f-ii) provides the interpretation of a stative sentence for which the superinterval implicature does not arise.

CQ= { a ,b }
(i) $\{ w \mid i \subseteq [now, +\infty). \exists j [i \subset_{ini} j \wedge P(j)(w)] \}$
(ii) $\{ w \mid i \subseteq [now, +\infty). P(i)(w) \}$

When the alternative set includes the information contributed by the superinterval implicature, as in (41f), then (41f-i) is stronger than (41f-ii).

g. STEP 7: The hearer must determine how to interpret the utterance containing *éppen* given the following two facts:

(1) The speaker chose to use the marked form (the sentence containing *éppen*) rather than the unmarked form (the prejacent).

(2) Given the superinterval implicature, the bare prejacent is interpreted by default as conveying the stronger alternative.

h. STEP 8: Since the unmarked interpretation is informationally stronger than the marked interpretation, the speaker is not in a position to assert the sentence corresponding to the unmarked interpretation. Strengthening further, this means that the speaker does not believe that the unmarked interpretation holds. This gives us an upper-bounded interpretation, which can be expressed as follows:

$$\{\, w \mid i \subseteq [now, +\infty).\, P(i)(w) \wedge \neg \exists j [\, i \subset_{ini} j \wedge P(j)(w)] \,\}$$

This interpretation gives us just the sense of temporal contingence that arises when *éppen* is used in non-dynamic stative sentences.

3.5 Perfective aspect

Perfective aspect is associated with readings in which an event is presented as an atomic whole:

(42) a. Context: Did you guys do anything fun over the weekend?

Alex went to the movies last night.

b. Context: Let's order sushi!

I will order salmon sashimi.

c. Context: Have you seen my brother? He was supposed to be home.

Jacob met a friend at the library.

Standardly, this is captured with the notion that the reference interval contains the entire run-time of the event.

Éppen is referenced in the literature on aspect in Hungarian for its Progressive-like effect on imperfective sentences, but not at all for its effect on perfective sentences, suggesting that its use in perfective sentences may be less common or impactful. When *éppen* occurs in perfective sentences, it restricts possible interpretations to those with a reference interval that is no longer than the event's run-time. This is difficult to see without any explicit temporal information, but when a temporal frame expression is included, the pattern becomes apparent. In (43a), the temporal frame expression specifies an interval that is substantially

longer than the run-time of the event. In such a sentence, *éppen* is infelicitous. In contrast, *éppen* is acceptable in (43b), where the temporal frame expression denotes an interval that is short relative to the run-time of the event.

(43) Context: I ask a friend if she has seen her parents recently. She says no, but that her brother János has:

a. (i) János hazament mult hónap-ban.
János home.go.PST.3SG last month-ine
'*János went home last month.*'

(ii) #János **éppen** hazament mult hónap-ban.
János ÉPPEN home go.PST.3SG last month-ine

b. (i) János hazament 3-kor.
János home go.PST.3SG 3-TEMP
'*János went home.*'

(ii) János **éppen** hazament 3-kor.
János ÉPPEN home go.PST.3SG 3-TEMP
'*János (just) went home at 3.*'

In the absence of explicit temporal information, the addition of *éppen* conveys that the event occurs precisely at a contextually salient time, as in (44).

(44) Context: I tell a friend that something weird happened last night. I was walking by the lighthouse. It started raining, and I heard big crashing noises...

a. János ki-fut-ott a torony-ból.
János PART-run-PST.3SG the tower-ELA
'*János ran out of the tower.*'

b. János **éppen** ki-fut-ott a torony-ból.
János ÉPPEN PART-run-PST.3SG the tower-ELA
'*János ran out of the tower (just then).*'

In (44a), the temporal relationship of János exiting the tower relative to the other events in the context is less clear.

If a speaker does not know when the event happened, *éppen* is infelicitous, as in (45).

(45) Context: Last night's party was strange. I explain that I don't really know what was going on...

a. Nem tud-om mikor, de János ki-fut-ott a torony-ból.
no know-NPST.1SG when, but János PART-run-PST.3SG the tower-ELA
'*I don't know when, but János ran out of the tower.*'

b. #Nem tud-om mikor, de János **éppen** ki-fut-ott a torony-ból.
no know-NPST.1SG when, but János ÉPPEN PART-run-PST.3SG the tower-ELA

Intended: '*I don't know when, but János ran out of the tower (just then).*'

3.5.1 The perfective operator

Predicate instantiation for the perfective operator is specified with the AT relation given in (46).

(46) $$\text{AT}(P,i,w) = \begin{cases} \exists e[P(e)(w) \wedge \tau(e) \subseteq i] & \text{if } P \subseteq \mathscr{E}^E \\ \exists e[P(e)(w) \wedge \tau(e) \circ i] & \text{if } P \subseteq \mathscr{E}^{\mathscr{S}} \\ P(i)(w) & \text{if } P \subseteq \mathscr{I} \end{cases}$$

A predicate of dynamic events $P^{\mathscr{E}}$ stands in the AT relation with an interval i and a world w iff there is a P event in w whose temporal trace is included in i. A predicate of states $P^{\mathscr{S}}$ stands in the AT relation with i and w iff there is a P event whose temporal trace overlaps i. A predicate of intervals $P^{\mathscr{I}}$ stands in the AT relation with i and w iff P holds throughout i.

I adopt a standard semantics for a perfective operator. This version is from Deo (2009a), but is essentially the same as in, for example, Iatridou, Anagnostopoulou & Izvorski (2001) and Hacquard (2006). PERF applies to predicates of events or intervals and returns a set of intervals such that there exists some interval i' contained in i, and P is instantiated AT i' in w.

(47) PERF: $\lambda P \lambda i\,.\,\exists i'\,[\,i' \subseteq i \wedge \text{AT}(P,i',w)]$

For a given world, proposition, and context, either $i' \subset i$, or $i = i'$. These logical possibilities are visually represented below.

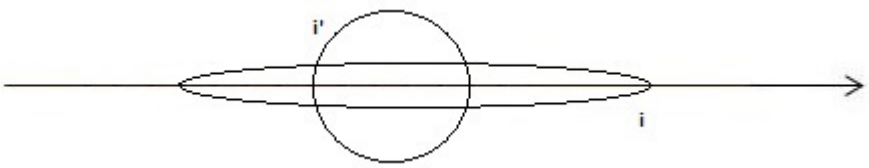

Figure 3.6 $i' \subset i$

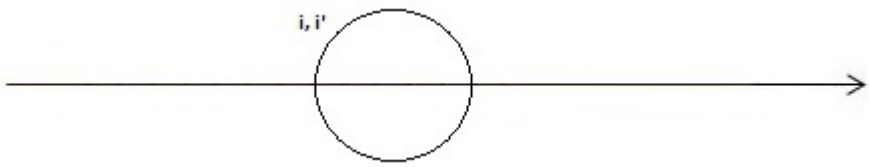

Figure 3.7 $i' = i$

I propose that as in imperfective sentences, *éppen* is used in contexts that give rise to a CQ in which alternatives in the CQ vary with respect to how precisely the value of an interval is interpreted. Specifically, *éppen* impacts the aspectual properties of a perfective sentence when the interval in question is the interval over which P is asserted to hold. Thus, the alternatives vary with respect to the value of j, as depicted in the graphics below.

(48) CQ = {a,b}

a. $\{\, w \mid i \subseteq (-\infty, now).\ \exists i'\,[\,i' \subseteq i \wedge \exists e[P(e)(w) \wedge \tau(e) \subseteq i']\,]\,\}$

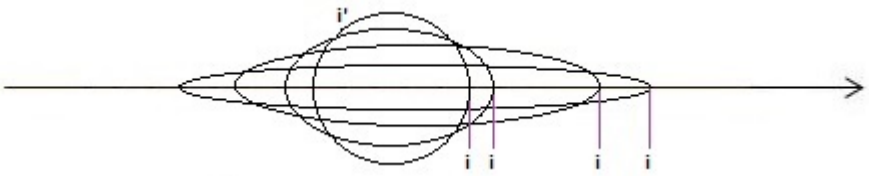

Figure 3.8 $i \subseteq i'$

(49) b. $\{ w \mid i \subseteq (-\infty, now). \exists i' [i' = i \wedge \exists e [P(e)(w) \wedge \tau(e) \subseteq i']] \}$

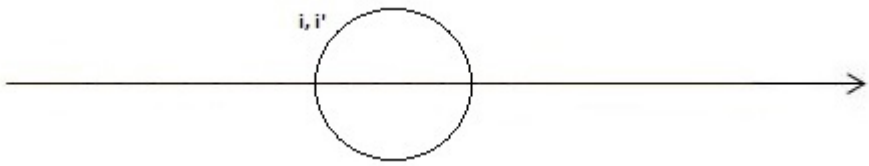

Figure 3.9 $i' = i$

The visual representation in (41a) shows the relationship $i \subseteq i'$, where i can be equal to i' or longer. The representation in (41b) illustrates the more precise characterization of when the event specified by P occurs, where $i' = i$. (49) is stronger because every world in which there is a P event whose temporal trace is in i' where $i' = i$ is also a world in which the temporal trace of e is in a larger i. The reverse is not true. Therefore, the proposition represented in (48a) entails the proposition represented in (49).

Éppen identifies the prejacent as the strongest true alternative. Thus, when *éppen* is used in an eventive perfective sentence, it asserts that P holds of i', and $i' = i$. That is, the reference interval is equal to the typical run-time of the kind of event in question. This explains the pattern described above: *éppen* is infelicitous with temporal frame expressions denoting intervals that are long relative to the event's run-time, and in the absence of temporal frame expressions, *éppen* conveys that the event occurs at some precise time.

3.5.2 A puzzle with 'when' clauses

In Hungarian, a sentence containing a 'when' clause like the following can give rise to multiple readings, the difference between them being the temporal order of the events in question. This is indicated in (50) and (51) with visual representations of the intervals over which the events hold.

(50) Context: I explain how János managed to avoid getting wet.

János el-fut-ott a torony-hoz, amikor el-ered-t az eső.
János PART-run-PST.3SG the tower-ALL, when PART-start-PST.3SG the rain
'*János ran to the tower, when the rain started.*'

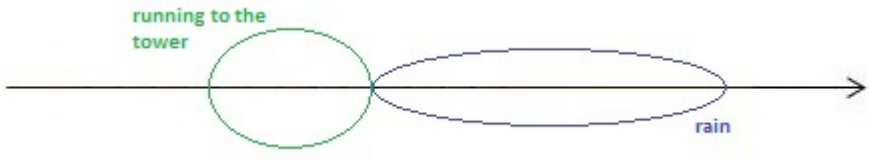

Figure 3.10

(51) Context: I explain why János is damp, but not totally soaked.

János el-fut-ott a torony-hoz, amikor el-ered-t az eső.
János PART-run-PST.3SG the tower-ALL, when PART-start-PST.3SG the rain
'*János ran to the tower, when the rain started.*'

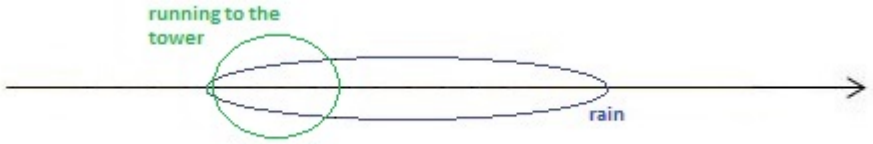

Figure 3.11

In sentences with 'when' clauses, *éppen* restricts the possible interpretations to only those in which the event in the main clause precedes the event in the 'when' clause, as in (52). The order represented in (51) is not available with *éppen*.

(52) Context: I explain how János managed to avoid getting wet.

János **éppen** el-fut-ott a torony-hoz, amikor el-ered-t az eső.
János ÉPPEN PART-run-PST.3SG the tower-ALL, when PART-start-PST.3SG the rain
'*János (just then) ran to the tower, when the rain started.*'

This pattern remains a puzzle.

3.6 *Éppen* and syntax

This section briefly observes how *éppen*'s behaviour relates to some syntactic patterns specific to Hungarian, and how this supports the analysis of *éppen* as a discourse particle. First, *éppen* can occur in almost any position in the sentence, like many other discourse particles. Second, the relationship between pre-verbal syntactic positions and focus has been well-studied in Hungarian. *Éppen* frequently occurs immediately preceding the verb, raising the question of whether it is one of a small set of elements that typically occur in this position (including focused elements, negation, and wh-words, for example) and displace other elements like verbal particles. I suggest that *éppen* is not a member of this class, and appears to be unable to take focus itself (at least, when it gives rise to aspectual effects) but like other discourse particles across languages, *éppen* can occur in many positions in the sentence, including the pre-verbal position.

3.6.1 Syntactic positions

As in many of the examples above, *éppen* immediately precedes the verb both when no verbal particle is present. When a verbal particle occurs post-verbally, *éppen* also precedes the verb, as in (53a).[13] When a verbal particle occurs attached to the front of a verb, *éppen* precedes both particle and verb, as in (53b).

13 The tendency of verbal particles to sometimes surface post-verbally in imperfective sentences is briefly discussed in Chapter 2. A majority of the work on this topic has been undertaken by Csirmaz (Csirmaz 2004b,a,c, 2006a,b), but it has also been addressed by Kiefer (Kiefer 1994) and É Kiss (É Kiss 2006b), albeit briefly, as well as by Ohnmacht (Ohnmacht 2012) more recently.

(53) Context: My sister brought our dirty dog back into the house, and exclaimed:

a. El sem hiszem, a kutya **éppen** dúlta fel a
PART NEG believe.NPST.1SG.DEF, the dog ÉPPEN destroy.PST.3SG.DEF PART the
kertet!
garden.ACC
'Can you believe it, the dog was destroying the garden!'

b. El sem hiszem, a kutya **éppen** fel-dúlta a
PART NEG believe.NPST.1SG.DEF, the dog ÉPPEN PART-destroy.PST.3SG.DEF the
kertet!
garden.ACC
'Can you believe it, the dog (just) destroyed the garden!'

Éppen can also occur in a number of other positions in the sentence (these examples were not shown earlier to maximize consistency during the explanation of the analysis). In the imperfective sentences in (54), for example, elements intervene between *éppen* and the verb, and in both sentences, *éppen* still restricts possible interpretations to those associated with progressives (though the delimited habitual is implausible in the contexts in (54)).

(54) a. Context: After a car accident, a policeman asks what happened. I say:

Az auto **éppen** ötven-nel ment.
the car ÉPPEN 50-INSTR go.PST.3SG.INDEF
'The car was going 50 mph.'

b. Context: I tell a friend that I saw Mari as I got to work that morning.

Éppen észak-nak ment.
ÉPPEN north-DAT go.PST.3SG.INDEF
'Mari was+ walking north.'

In fact, *éppen* can occur in almost any position in the sentence and still give rise to aspectual effects, as in (55), in which *éppen* is felicitous in any of the listed positions, and still conveys that only the event-in-progress and delimited habitual readings are available.

(55) Context: I tell a friend how I sprained my ankle.

(**Éppen**) ment (**éppen**) le (**éppen**) a lépcsőn (**éppen**), amikor...
ÉPPEN go.PST.3SG.INDEF ÉPPEN PART ÉPPEN the stairs.SUP ÉPPEN, when...
'*I was going down the stairs, when...*' Event-in-progress
'*I was going down the stairs (those days), when...*' Delimited hab.

This syntactic flexibility distinguishes *éppen* from members of the small class of elements that regularly appear pre-verbally in Hungarian (e.g. negation, focused elements, and wh-words). These elements cannot freely occur in the range of positions that *éppen* can. Further, when they do occur in other positions,

different interpretations result.[14] These differences suggest that *éppen* is not a member of this class, despite the fact that *éppen* frequently occurs pre-verbally. I suggest that *éppen*'s pre-verbal placement can rather be attributed to its nature as a discourse particle.

The literature on focus in Hungarian is vast. I will not attempt to summarize the predominant views here, but instead want to note a few facts that suggest that *éppen* is not the kind of element that can take focus.

First, the use of *éppen* is independent of the kind of pre-verbal focus familiar from the literature. That is, other elements can be focused in a sentence containing *éppen*, and the aspectual effects of *éppen* still arise as usual, as in (56).[15]

(56) Context: My dad asks if I recall what time we had lunch. I remember that an alarm I set for noon went off shortly beforehand, while I was pruning tree branches, and so I say:

DÉLBEN mász-tam éppen föl a fára.
noon.at climb-PST.1SG.DEF ÉPPEN PART the tree.SUB
'*It was exactly at noon that I was climbing the tree (those days).*'[16,]

In (56), *délben*, 'noon' is focused. This focus gives rise to a reading similar to the kind of reading associated with the English it-cleft construction.[17] The sentence is imperfective, so the possible readings that arise with *éppen* are the event-in-progress and the delimited habitual reading.

The verb itself, *másztam* 'climb.PST.1SG.DEF', can also be focused. The aspectual effect of *éppen* remains the same, as in (57).

(57) Context: I tell a friend I'd been pruning my trees. She asks if I saw the noon news about someone falling from a tree. I say no, because:

Délben **MÁSZ-TAM** éppen föl a fára.
noon.at climb-PST.1SG.DEF ÉPPEN PART the tree.SUB
'At noon, it was climbing the tree that I was doing.'

In addition, it seems that at least on its aspectual readings, *éppen* cannot itself receive stress associated with focus, despite the fact that it frequently pre-verbally.

(58) Context: I tell a friend I'd been pruning my trees. She asks if I saw the noon news about someone falling from a tree. I say no, because:

#ÉPPEN mász-tam föl a fára.
ÉPPEN climb-PST.1SG.DEF PART the tree.SUB
Intended: *?It WAS climbing the tree that I was doing.'*

14 For example, the scope of negation can vary with its syntactic position (Csirmaz 2006a, a.o.).

15 Similar imperfective sentences containing a focused element and *éppen*) have been argued to be ungrammatical in Ohnmacht (2012), but in my experience, informants find them acceptable.

16 Note that *éppen* can also contribute precisification (indicated with 'exactly' in the translation). This will be discussed further in Chapter 4.

17 The parallel between pre-verbal focus in Hungarian was noted by informants (p.c.) and has been proposed in the literature (e.g. Onea & Beaver 2009).

Like *éppen*, other discourse particles in Hungarian can occur pre-verbally, as in (59).

(59) a. Context: Laci tells me the story of how he fell out of a tree.

Na mász-tam föl a fára.
so/well climb-PST.1SG.DEF PART the tree.SUB
'*So/well, I was climbing the tree...*'

b. Context: My mom yells at me for making trouble. I retort:

Csak mász-tam föl a fára!
only climb-PST.1SG.DEF PART the tree.SUB
'*I was only climbing the tree!*'

These data support the notion that *éppen*'s pre-verbal placement does not indicate a special status of the sort claimed for other pre-verbal elements such as negation, focus, and wh-words in Hungarian. Rather, *éppen*'s syntactic behaviour is parallel to that of other discourse particles. The reasons behind why *éppen* cannot take stress associated with focus remains a puzzle for future research.

3.7 Conclusion

In this chapter, it was argued that a discourse particle which performs a variety of non-aspectual functions in the language can, under certain conditions, be used restrict possible aspectual readings. This use of *éppen* is productive in the sense that it can arise with predicate type (dynamic, stative, telic, atelic, etc.). In imperfective sentences containing dynamic predicates, *éppen* restricts possible readings to the delimited habitual and event-in-progress readings. In imperfective sentences containing stative predicates, *éppen* gives rise to an implicature that the state described holds only temporarily. In perfective sentences, *éppen* restricts possible readings to only those in which the reference interval is no longer than the event's run-time.

In a sense, *éppen* bridges the gap between lexical expressions like temporal frame adverbs that carry specific information, and dedicated grammaticalized aspectual markers. That is, *éppen* is not as specific in what it conveys as a temporal adverb, nor is it as generalized as a dedicated aspect marker. This analysis of *éppen* raises the question of whether *éppen* allows us to shine a spotlight on a stage in the language's development of dedicated aspectual marking. Is *éppen* an emerging aspect marker in the language? Or is it possible that *éppen* represents a stable state in the language's tense and aspect system, and Hungarian simply conveys aspectual information differently from languages like English, which have grammaticalized markers like the Progressive. I make no attempt to speculate on the answer to this question, as developing a reliable hypothesis would necessitate significant research into the diachronic facts of tense and aspect marking in Hungarian. However, this analysis and the facts about *éppen*'s uses and distribution suggest that this question is a relevant one, not just for Hungarian, but perhaps for other languages as well.

Chapter 4

Non-aspectual uses of *éppen*

4.1 Introduction

In Chapter 3, an analysis of *éppen* as a discourse particle was proposed in order to capture *éppen*'s aspectual effects. *Éppen* also exhibits a range of non-aspectual effects, primary among which is the precisification of a variety of expressions. In this chapter, I suggest that the analysis of *éppen* from Chapter 3 can be extended to account for these non-aspectual uses.

Precisifiers like English 'exactly', 'right', 'just', and Hungarian *pontosan* 'exactly' convey that standards of precision are increased for the scale associated with the modified expression, as in (1).

(1) a. Context: How long has John been in town?

The train arrived at **exactly** 3pm.

b. Context: My little cousin is running around looking for her ball. I say:

The ball is **right** there, under the tree.

c. Context: When my mom returns from getting the mail, I tell her:

The phone **just** rang.

d. Context: I am doing a write-up of a school science experiment on water displacement. I report:

A pohár **pontosan** tele volt.
the glass exactly full be.PST.3SG
'*The glass was exactly full.*'

Éppen gives rise to this kind of precisification primarily when it occurs with expressions conveying temporal or spatial location, as in (2).

(2) a. Context: My friend asks about when we should leave on our trip. I say:

Éppen négy-kor el-indul-junk.
ÉPPEN four-TEMP PART-set.out-SUBJ.NPST.1PL
'*We should set out at exactly 4 o'clock.*' Temporal

b. Context: My son couldn't find his soccer ball. I tell him I saw it earlier:

A labda éppen **a fa előtt** volt.
the ball ÉPPEN the tree in.front be.PST.3SG
'*The ball was right in front of the tree.*' Spatial

Like 'just', *éppen* can express that a predicate holds by a negligibly small margin or no margin, as in (3b). I will refer to this as the 'margin reading'.

(3) a. Context: I am rearranging my closet. I say:

The sweaters **just** fit in the drawer.

b. Context: A friend and I talk about an old map we're examining.

A varos **éppen** látható a térkérp-en.
the city ÉPPEN visible the map-SUP
'*The city is just visible on the map.*' Margin reading

In addition, *éppen* in all of its capacities is liable to be used when the truth of a proposition is surprising, unplanned, or a matter of coincidence or happenstance, as in (47).

(4) Context: An acquaintance makes fun of János's inconsistent commitment to vegetarianism.

János mostanában **éppen** eszik hús-t.
János these.days ÉPPEN eat.NPST.3SG meat-ACC
'*János happens to be eating meat these days.*'[1] Ongoing, happenstance

I suggest that this tendency is best viewed not as a separate use of *éppen*, but rather as a possibility allowed for by the semantics of *éppen* (regardless of the alternative set in question).

In this chapter, I will show how the analysis proposed in Chapter 3 can be extended to account for these three non-aspectual effects of *éppen* (precisification, the margin reading, and the happenstance/surprisingness effect). §2 briefly restates the core of the analysis proposed in Chapter 3. In §3, I suggest that precisifying readings arise when *éppen* is used in contexts in which the alternatives vary along a scale of measurement. §4 proposes that the margin reading arises when the strongest true alternative is the closest to false alternatives. §5 discusses the surprisingness effect can arise with *éppen* because the truth of the prejacent is part of the assertion, rather than the presupposition. §6 concludes.

This analysis proposes that *éppen* is a discourse particle with diverse function, including precisification and optional aspectual marking. The discovery that *éppen* plays such diverse and seemingly unrelated roles adds to the body of emerging research on the myriad ways languages can mark tense and aspect distinctions in the absence of dedicated, grammaticalized markers. Further, a unified analysis is possible because in terms of the contexts of utterance (and specifically, alternatives in the CQ), there are crucial commonalities between more familiar functions of discourse markers (such as precisification) on the one hand, and tense and aspect on the other. This points to the potential for exploring previously unknown connections between seemingly unrelated uses through explicating the role of context in utterances.

1 Some informants feel that although *éppen* can give rise to a feeling of happenstance, English 'happens to' conveys this more strongly than *éppen*.

4.2 Analysis

4.2.1 Set-up

Following Coppock & Beaver (2013), I make the standard assumption that a context S provides a common ground CG, which is a set of propositions.[2] S provides a current question CQ_s, which is a set of alternatives. This set of alternatives comprises a subset of the propositions contained in CG. Finally, S also provides a partial ordering over the alternative set, $\geq_S$. The CQ in a state S can be defined as the set of possibilities ordered by the relation $\geq_S$:

(5) CQ of a state S: $\text{CQ}_S = \{p \mid \exists p' [p \geq_S p' \vee p' \geq_S p]\}$

I follow Beaver & Clark (2008) via Coppock & Beaver (2013: 23) in defining the information content of S, S^*, as the union of all the possibilities in the CQ_s.

(6) **Informational content of a state**:
If S is a state, then the informational content of S is $S^* = \cup\text{CQ}_S$

The informational content is therefore is a set of possible worlds in which the propositions in the alternative set are true. Presuppositions are evaluated with respect to this set of possible worlds.

The ordering relation $\geq_s$ is a strength relation based on asymmetrical entailment, where if x entails y, then x is asymmetrically stronger than y.

4.2.2 Lexical entry

Éppen is an inquiry-terminating construction that comments on answers to the Current Question (CQ). The meaning of *éppen* consists of two parts:

- **Presupposition:** There exists a unique strongest true alternative in the CQ.
- **Assertion:** The prejacent is that alternative.

Formally, this can be represented as follows:

(7) a. **Presupposition:** $\text{STR}_s = \lambda w.\exists p' \in \text{CQ}_S [p'(w) \wedge \forall p'' \in \text{CQ}_S [p''(w) \rightarrow p' > p'']]$
b. **Assertion:** $\text{IDENT}_s = \lambda w.\forall p' [p'(w) \rightarrow p' = p]$

(8) $[\![\textit{éppen}]\!] = \lambda p \,.\, \lambda w : \text{STR}_s(p)(w) \,.\, \text{IDENT}_s(p)(w)$

Éppen applies at the proposition level. Thus, an alternative p is the strongest among a set of alternatives iff for all p' in that set of alternatives, the set of worlds in p is a proper subset of the set of worlds in p'.

Éppen is used to convey increased precision. On this analysis, entailment corresponds to precision. That is, the strongest alternative in an entailment-based strength ranking is the most precise. By identifying the prejacent as the strongest true alternative, *éppen* conveys that what is expressed by the prejacent is the most precise answer that the speaker can provide in the given context.

The use of *éppen* signals that the CQ is constrained to be one in which precision-based construals of some interval are introduced (either overtly or covertly) by some expression in the prejacent.

2 This analysis also makes use of other work in this tradition, e.g. (Stalnaker 1978), (Hamblin 1971), (Groenendijk & Stokhof 1984), (Rooth 1985), (Ginzburg 1996), and (Roberts 1996) among others.

Coppock & Beaver propose that differences in meaning between individual exclusives can be in part attributed to the fact that they answer different questions.[3] *Éppen* is not able to be used in some kinds of contexts in which 'exactly' and the Hungarian equivalent *pontosan* are felicitous, as in (9).

(9) Context: I asked my friend if the can of juice fit in the glass, and she said yes:

a. A pohár **pontosan** tele volt.
the glass exactly full be.PST.3SG
'*The glass was exactly full.*'

b. #A pohár **éppen** tele volt.
the glass ÉPPEN full be.PST.3SG
Intended: '*The glass was exactly full.*'[4]

I suggest that some of the differences between precisifiers can be captured in the same fashion that Coppock & Beaver account for differences between exclusives. I leave the task of fully teasing apart the distributional differences between *éppen* and other precisifiers as a task for future work, and merely hope to make a first approximation. To this end, I suggest that *éppen* answers the question 'Over precisely what interval does p hold?'. Let $\text{PRECISE}(j)$ be the level of precision of an interval. If $P(i)$ and $P(i')$ are two answers to the question $?i[P(i)]$, then it should hold that in general, if $P(j)$ and $P(k)$ then $\text{PRECISE}(j) > \text{PRECISE}(k)$.[5] Let us use PRECISE to signify that a scale has this property. Then the lexical entry for *éppen* can be the following.

(10) $[\![\textit{éppen}]\!] = \lambda p \,.\, \lambda w : \text{CQ}_s \subseteq ?\text{i}[\text{P(i)}] \wedge \text{PRECISE}(\geq_s) \wedge$
$\text{STR}_s(P(i))(w) \,.\, \text{IDENT}_s(P(i))(w)$

The 'core' meaning of *éppen* might be similar to other precisifiers: it presupposes that there is some strongest, true alternative and asserts that the prejacent is this alternative. The fact that *éppen* presupposes a question about how precise the interval for which some property holds distinguishes it from uses of 'exactly', *pontosan*, and other precisifiers which are not limited to occurring with intervals and cannot be used to mark aspect.

4.3 Precisification

Éppen increases precision in sentences containing temporal frame expressions like '3pm' or 'yesterday', measure expressions like '10 cm long', and locative expressions like 'next to the restaurant'. Though the framework is different, *éppen*'s function is parallel to that proposed for English slack regulators and degree

3 For example, Coppock & Beaver suggest that 'mere' answers the question, 'What properties does x have?' and ranks answers based on their power over individuals, whereas adjectival 'only' answers the question 'What things have property x'. Examples from Coppock & Beaver (2013: 37, 40).

(i) a. My new job will start a **mere** few weeks after the contract arrives.
b. More than a **mere** iPhone case. Every bit as luxe as it looks.
c. Cajun food is not a **mere** fad.
d. **Only** Jane is a teacher.

4 Note that *éppen* is fine here if the temporal contingence reading, '*the glass was full just then.*' is intended.

5 I am abstracting away from how predicates are instantiated in time for the sake of simplicity.

modifiers like 'exactly' and 'precisely': all these particles are taken to eliminate less precise alternatives from consideration (see e.g. Lasersohn 1999, Kennedy & McNally 2005 and Sauerland & Stateva 2007). Examples of *éppen*'s precisifying effect can be seen in (11).

(11) a. Context: A friend asks when we should be at the train station to pick up Mari.

A vonat éppen **3-kor** érkezik.
the train ÉPPEN 3-TEMP arrive.NPST.3SG
'*The train arrives exactly at 3.*'[6] Temporal frame

b. Context: My son couldn't find his soccer ball. I tell him I saw it earlier:

A labda éppen **a fa előtt** volt.
the ball ÉPPEN the tree in.front be.PST.3SG
'*The ball was right in front of the tree.*' Spatial frame

c. Context: I am looking for a 10cm-long object. A friend points out writing utensils on my desk, saying:

A ceruzá éppen **10 centis**.
the pencil ÉPPEN 10 cms
'*The pencil is exactly 10 cms.*' Measure expression

This subsection will discuss what it means to increase precision, what kinds of current questions must be part of the contexts in which *éppen* contributes this effect, and how the three types of predicates shown in (11) interact with *éppen* to give rise to precisification.

4.3.1 Precisifiers

Much has been said about words and phrases like 'exactly' and 'strictly speaking', which increase standards of precision in English. There is quite a bit of variation between precisifiers, both in terms of their meaning and distribution (not to mention the approaches that have been taken in the literature toward their analysis). For example, 'exactly' and 'perfectly' both increase the standards of precision of expressions they occur with, but have different distributions. To illustrate, 'exactly' can be used with temporal expressions such as '3pm', but not with adjectives like 'round' as in (12).

(12) a. The train arrived at exactly **3pm**.

b. ?The ball is exactly **round**.

'Perfectly', on the other hand, is acceptable with adjectives like round, but not times like '3pm'.

(13) a. The ball is perfectly **round**.

6 While *éppen* has been translated heretofore as 'exactly', *pontosan* is perhaps a better match for that English translation, deriving from the word *pont*, meaning point. I have chosen to translate the English counterparts to *éppen* sentences exhibiting a precisification effect with whatever English precisifier is acceptable for that English sentence. Therefore, the precisifier in the English translation will vary with the expression the precisifier occurs with, while *éppen* is consistently used in the Hungarian versions. The upshot of this is that *éppen* has a precisifying effect with a wider range of expressions than English 'exactly' does.

b. #The train arrived at perfectly **3pm**.

'Right' is another precisifier which works with a different class of items altogether, mostly consisting of spatial and temporal frame expressions:

(14) a. Watch out, it's **right** behind you!

b. ?Watch out, it's **exactly** behind you!

c. #Watch out, it's **perfectly** behind you!

d. #The ball is **right** round.

'Just' exhibits a wide range of effects, including precisification. Not only can 'just' express precisification in all the above cases; it can also convey additional information. For example, in (15a), there seems to be an implication that the ball was expected to be something beyond simply round (whatever that may be). In (15b), 'just' conveys something closer to 'barely' than the kind of precisification expressed by 'exactly', and in (15c), there seems to be some incompatibility between 'just' and the urgency implied by 'watch out'.

(15) a. The ball is **just** round.

b. The train arrived **just** at 3pm.

c. ?Watch out, it's **just** behind you!

In short, different precisifiers have different domains of application, and (sometimes subtly) different meanings. We will see that *éppen* is no exception.

4.3.2 The precision landscape

Part of the notion of increasing standards of precision is the assumption that there is some vagueness or imprecision inherent in what is being modified by a precisifier. There are many ways of approaching imprecision. Some, e.g. Lasersohn, consider times like 3pm to be constants:'3pm' may refer to a different point on a timeline in different context, but it always refers to a single point, the length of which cannot vary across contexts. On this view, when we say something like (16) in a situation where the facts don't match our statement (e.g. where the train comes at 3:02, not at 3:00), we are allowing for a false sentence to be considered acceptable because the margin of error is small enough as to be irrelevant for our purposes in a given context.

(16) Context: A friend wants to know how long János has been waiting for someone to pick him up. I tell her...

The train arrived at **3**. Actual arrival: 3:02

For Lasersohn, a precisifier (or slack regulator, á la Lasersohn 1999) like 'exactly' does not increase standards of precision on a truth-conditionally vague expression. Instead, it indicates that an increased restriction on what is considered an acceptable margin of error.

A different view is that shared by Krifka (2007) and Sauerland & Stateva (2007) (a.o.), which takes

expressions like '3pm' to denote intervals which can vary in length according to context. In the context provided, (16), then, is not false. Rather, '3pm' in this context denotes an interval long enough to encompass 3:02. Increasing the standard of precision by using a precisifier like 'exactly' involves restricting the length of the interval denoted by '3pm'. How much the length of the interval is restricted is determined by the context. This differs from the view in Lasersohn (1999) in that instead of denoting a single instant, an expression like '3pm' denotes an interval, the length of which varies according to context. As a result, there are no cases of 'false but acceptable' utterances: the utterances in question are truthful, and whether or not they are acceptable depends on how the context limits the length of the interval. Instead of restricting acceptability of false utterances, precisifiers modify the length of the interval denoted by expressions like '3pm'.

Both views capture that the addition of 'exactly' increases precision: uttering (17a) if the train came at 3:02 is unacceptable, whereas uttering (17b) in the same context is acceptable.

(17) a. #The train arrived at **exactly** 3pm. Actual arrival: 3:02

b. The train arrived at 3pm. Actual arrival: 3:02

Measure expressions, temporal frame expressions, and spatial frame expressions share this reliance on context to determine the limits of their acceptability. Although the many ways of modelling this type of context-dependence and the behaviour of precisifiers (or slack regulators, a la Lasersohn) differ on many fronts, including whether sentences which are acceptable but inaccurate should be considered true (Sauerland & Stateva 2007, and Krifka 2007, a.o.) or false but acceptable (Lasersohn 1999), and whether the context-dependence of scalar and non-scalar expressions can (or should) be captured in the same way, they all agree that individual precisifiers vary both in terms of meaning and distribution, and that their context-dependence is a central part of their meaning.

I suggest that the analysis of *éppen* from Chapter 3 can be extended to account for how *éppen* can precisify measure expressions, temporal frame expressions, and spatial expressions. This is meant to be a rough sketch: providing a formal analysis of all the expressions that *éppen* can increase precision for is beyond the scope of this work. The account suggested here should in theory be compatible with standard accounts of these types of expression.

On this account, *éppen* gives rise to increased precision when the CQ consists of alternatives that vary with respect to how narrowly the value along the parameter associated with the measure phrase, temporal frame, or spatial frame is construed. The alternative set then consists of propositions identical to the prejacent in all ways except the value along this dimension, which varies. As with *éppen*'s aspectual uses, the strength of alternatives is based on entailment. *Éppen* asserts that prejacent is the strongest unique true alternative. On an entailment-based strength ranking, the strongest alternative is the one containing the narrowest construal of the measurement. The remainder of this section is devoted to exploring the kinds of contexts in which the semantics of *éppen* results in a precisifying effect with measure, temporal, and spatial expressions, and how the proposed analysis can gives rise to this effect.

4.3.3 Temporal frame expressions

Temporal frame expressions such as 'tomorrow', 'at 3pm', and 'now' help locate an event on a timeline. With temporal frame expressions, *éppen* always has a precisifying effect. This is shown in (18), in which (18a) shows a sentence with a temporal frame expression without *éppen*, and (18b) shows that with the addition of *éppen*, the temporal interval in question (in this case, *naplementekor*, 'at sunset') is construed more precisely.

(18) Context: I tell a friend how the evening views on my vacation were spectacular.

a. Hawaii-ban mindig naplementekor mentünk vacsoráz-ni.
Hawaii-INE always sunset go.PST.2PL dine-INF
'*In Hawaii, we always went to dinner at sunset.*'

b. Hawaii-ban mindig **éppen** naplementekor mentünk vacsoráz-ni.
Hawaii-INE always ÉPPEN sunset go.PST.2PL dine-INF
'*In Hawaii, we always went to dinner exactly at sunset.*'

Because a certain amount of imprecision is allowed with temporal expressions like 'at sunset', the sentence in (18a) might be acceptable even if the speaker went to dinner slightly before or after sunset. (18b), on the other hand, is only felicitous in a narrower set of contexts, in which the interval 'at sunset' is construed more narrowly.

Like *éppen*'s aspectual effects, the precisification effect with temporal expressions arises when the time at which the property described by the predicate holds is relevant. This raises the question of whether *éppen* carries temporal information itself. If so, we might expect that we could use *éppen* to indicate a point on the timeline itself. This does not seem to be the case. (19), for example, cannot answer a question like 'When is János getting here?', or any other question for that matter.

(19) #**Éppen**!
ÉPPEN
'*Now/then/at X time.*'

However, if we add a temporal frame expression, the response becomes felicitous as a response to a question like 'When is János getting here?', as in (20).

(20) **Éppen** most!
ÉPPEN now
'*Right now!*'

From the minimal pair in (19) and (20), we can surmise that *éppen* can only interact with a temporal reference that is already specified, rather than contributing temporal information itself. Compatible with this supposition is the fact that a wide range of temporal frame expressions seem to be felicitous with *éppen*. So long as there is a context in which it makes sense to increase standards of precision on the interval in question, *éppen* can precisify any temporal frame expression present in the utterance, as in (21).

(21) a. Context: I tell my parents about Mari's new exercise regimen.

Mari sétált a park-ban éppen **egy fél-órát**.
Mari walk.PST.3SG the park-INE ÉPPEN half-hour.ACC
'*Mari walked in the park for exactly half an hr.*'

b. Context: A private investigator reports on the whereabouts of Zsuzsa.

Zsuzsa NY-ba ment éppen **harom nap-ra**.
Zsuzsa NY-ILL go.PST.3SG ÉPPEN three day-SUB
'*Zsuzsa went to NY for exactly 3 days.*'

c. Context: A science teacher lectures 3rd-graders on the solar system.

A Föld meg-fordul a Nap körül éppen **egy év alatt**.
the Earth revolve.NPST.3SG the Sun around ÉPPEN one year under
'*The Earth revolves around the Sun in exactly one year.*' [7]

Éppen with temporal frame expressions

Let's use the following example sentence to sketch out how the analysis of *éppen* can be extended to account for precisifying readings with temporal frame expressions.

(22) Context: As part of a school experiment, I am measuring train arrival times. I report to a friend:

A vonat **éppen** 3-kor érkezett.
the train ÉPPEN 3-TEMP arrive.PST.3SG
'*The train arrived at exactly 3.*'

As described in §2, the alternative set is a set of declarative sentences that resemble the current question and vary along a single dimension. I claim that precisifying readings arise in contexts in which the CQ consists of alternatives that vary with respect to how narrowly the interval described by the temporal frame expression is construed. The set of alternatives associated with (22) would look (roughly) something like the following, where the difference between alternatives is how precisely the focused element (the temporal interval denoted by '3') is construed.

(23) $\text{CQ} = \{a, b, c, d\}$

a. $\{w | P(w)(i) \wedge i = 2:59:99 - 3:00:01\}$
b. $\{w | P(w)(i) \wedge i = 2:59 - 3:00\}$
c. $\{w | P(w)(i) \wedge i = 2:55 - 3:05\}$
d. $\{w | P(w)(i) \wedge i = 2:45 - 3:15\}$

Éppen indicates that the strongest true alternative is the intended alternative. (23a) is the strongest true alternative: all worlds in which the train arrived between 2:59:99 - 3:00:01 are also worlds in which the train arrived between 2:59 - 3:00, and so on. How is it that this is interpreted as precisification? (23a) is the narrowest true construal of the train's arrival time in the alternative set. In other words, (23a) is the most precise way of describing the train's arrival time out of the available options. In general terms, hearers understand that *éppen*-containing sentences are as precise as possible in a given context with respect to the focused element.[8]

7 Although the sentences in (21) are all perfectly acceptable, (21c) is also felicitous and perhaps more common with another precisifier, *pontosan*, which is closer to English 'exactly'. Because *éppen* is known to give rise to temporal contingence effects with stative predicates, *pontosan* may be used more frequently in utterances describing relatively permanent properties topics, like the Earth's revolution around the sun in (21c). With that said, *éppen* is interchangeable with *pontosan* with little to no change in meaning in most cases.

8 Note that like with the aspectual uses discussed in Chapter 3, the membership of the alternative set is determined in part by the context. So, the focused component in each alternative has to be plausible in the context. A casual conversation between friends about when a train will arrive is unlikely to involve references to milliseconds, for example. As a result, alternatives containing temporal expressions involving milliseconds will not be part of the alternative set for that context.

4.3.4 Measure expressions

Measure expressions provide a value along some parameter of measurement, and this value is asserted to hold of a referent in the sentence. Often the measurements describe physical attributes, such as '3 meters long' or '5 miles deep', but this is not a specific requirement. In fact, one can view temporal expressions as being a subset of measure expressions that deal with temporal measurements, though I've treated them separately here. With all measure phrases, *éppen* can be used to give rise to a precisifying effect, as in (24).[9]

(24) Context: A friend is looking for a small pencil, one that will fit in her pocket. I tell her that I have several writing utensils. I say:

a. A ceruzá 10 centis.
the pencil 10 cms
'*The pencil is 10 cms (long).*'

b. A ceruzá **éppen** 10 centis.
the pencil ÉPPEN 10 cms
'*The pencil is exactly 10 cms (long).*'

Just as with the temporal expressions above, the sentence without *éppen* in (24a) allows for a certain amount of imprecision. How much imprecision is acceptable is determined by the context in which the sentence is uttered. Let's imagine that I am in the context in (24a), and my pencil is 10.7cm long. In this context, imprecision on the order of a centimeter or so is probably acceptable: my friend will be unlikely to care about half a centimeter or so. In contrast, (24b) is unacceptable if my pencil is 10.7cm long because *éppen* requires an increase in precision. That is, (24b) is only felicitous if the pencil is much closer to 10cm long, because *éppen* asserts that the prejacent be interpreted as precisely as possible in the context.

I propose that *éppen* gives rise to a precisifying effect with measure expressions when the CQ consists of alternatives that vary by how narrowly construed the value along the parameter of measurement for the referent in question is. A sample alternative set corresponding to the sentence in (24b) is given in (25), where l is the length of the pencil.

(25) CQ = $\{a, b, c\}$
a. $\{w|P(w) \wedge l = 9.9 - 10.1cm\}$
b. $\{w|P(w) \wedge l = 9.5 - 10.5cm\}$
c. $\{w|P(w) \wedge l = 9 - 11cm\}$

Éppen asserts that the prejacent be construed as precisely as possible in the given context. The strongest true alternative in (25) is (25a). The set of worlds in (25a) is a subset of the sets of worlds in (25b) and (25c). That is, all worlds in which the pencil is between 9.9 and 10.1 cm long are also worlds in which it is between 9.5 and 10.5 cm long, and between 9 and 11 cm long. *Éppen* asserts that the prejacent is to be

9 All the examples we have seen so far of precisification with *éppen* show *éppen* as a part of the predicate. The precisification effect arises when *éppen* is part of the subject as well, suggesting that *éppen*'s function as a precisifier is not tied to word order. In (i), *éppen* conveys increased precision of the measure in the subject.

(i) Context: I'm looking for my 10cm pencil. My mom remembers where it is and says:
Ez az **éppen** 10 centi ceruza van a pohár-ban.
this the ÉPPEN 10 cm pencil be.NPST.3SG. the glass-INE
'*The exactly 10cm pencil is in the glass.*'

interpreted as in (25a), the strongest alternative.

4.3.5 Locative expressions

Éppen can also occur with locative expressions such as 'next to the tree' or 'in front of János'. Such expressions can be thought of as spatial frames, a locative counterpart to the temporal frame expressions discussed in §3.3. Locative expressions locate objects or individuals in space rather than in time, but *éppen*'s effect on the interpretation is similar, as in (26).

(26) a. Context: My son couldn't find his soccer ball. I tell him I saw it earlier:

A labda **éppen** a fa előtt volt.
the ball ÉPPEN the tree in.front be.PST.3SG
'*The ball was right in front of the tree.*'

b. Context: I call my mom to tell her how my honeymoon is going.

Múlt hét-en **éppen** a hotel mellett mentünk úsz-ni.
last week-SUP ÉPPEN the hotel next.to go.PST.2PL swim-INF
'*Last week, we went swimming right next to the hotel.*'

With locative expressions, *éppen* expresses that the referent of the nominal expression in question is closer to the center of the location described by the spatial terms than it would be if *éppen* were not present. In (26a), for example, *a fa előtt*, meaning 'in front of the tree', refers to an area around the tree, the radius of which is contextually determined.[10]

With the addition of *éppen*, the size of the area delimited by the spatial frame expression is interpreted as being the most precise possible construal of that space. In the sentence in (27a), for example, *éppen* conveys that *itt* 'here' is intended to be interpreted as narrowly as possible: i.e. *éppen itt* is the smallest possible area that contains the book. This contrasts with (27b), in which *itt* can be interpreted more loosely, to refer to a larger area.

(27) Context: My brother is looking for the book he has been reading. I spot it on the coffee table next to him. I say:

a. **Éppen** itt van a könyv.
ÉPPEN here be.NPST.3SG the book
'*The book is right here.*'

10 That is, I take the referents of spatial frame expressions to be determined in part by context and properties of the utterance in which they occur (just as the exact interval described by a temporal frame expression like 'last week' is influenced by these same factors). For example, the size of the area described by 'here' in the sentence in (ia) is large compared to the area described by 'here' in (ib), because the size of an area occupied by a restaurant is much larger than the area occupied by a word on a page.

(i) a. Context: My sister is driving us to a new restaurant. The GPS tells us we've arrived, but she doesn't see it. I point to it and say:
The restaurant is right here.

b. Context: I'm doing a word search, but I get stuck. My mom points to it, saying:
The word is right here.

b. Itt van a könyv.
here be.NPST.3SG the book
'*The book is here.*'

Just as *éppen* cannot be used alone to specify an interval on a timeline, neither can *éppen* be used by itself to specify a location, as in (28). It can, however, be used with *itt* 'here' or other spatial expressions as an answer to a question, as in (28a).

(28) Context: I made lunch for my friend and put it in the fridge. She asks me where it is:

Hol van a szendvics?
where be.NPST.3SG the sandwich
'*Where is the sandwich?*'

a. #*Éppen!*
ÉPPEN
Intended: '*Right here!*'

a. Éppen itt!
ÉPPEN here
'*Right here!*'

I suggest that *éppen* gives rise to a precisifying effect with spatial frame expressions when the CQ consists of alternatives that vary by how narrowly the location of the referent(s) in the predicate is construed. An alternative set for the sentence in (26a), repeated here, might look something like that in (29).

(29) a. Context: My son couldn't find his soccer ball. I tell him I saw it earlier:

A labda **éppen** a fa előtt volt.
the ball ÉPPEN the tree in.front be.PST.3SG
'*The ball was right in front of the tree.*'

b. CQ = $\{a, b, c\}$

a. $\{w|P(w) \wedge \leq 1$ ft in front the tree $\}$

b. $\{w|P(w) \wedge \leq 5$ ft in front of the tree $\}$

c. $\{w|P(w) \wedge \leq 10$ ft in front the tree $\}$

(29b) is the strongest alternative, because all the worlds in which the ball is 1 foot or less away from the tree are also worlds in which the ball is 5 feet or less and 10 feet or less away from the tree, but the reverse is not necessarily true. By asserting that the prejacent be interpreted as strongly as possible in the given context, *éppen* conveys that the prejacent be interpreted as in (29b). This is as precise as the speaker can be given the alternatives in (29), so *éppen* is understood to convey that the prejacent is to be interpreted with maximal precision.

4.3.6 Additional Notes

This sections briefly presents some related patterns. Extending the analysis to cover this additional data remains a matter for future work.

Precisification and negation

It is well-known that precisifiers like 'exactly' in English behave differently in conjunction with negation than they do in sentences without negation (e.g. Sauerland & Stateva 2007). This is reflected in the distribution of 'not exactly', which can be used in sentences in which 'exactly' on its own is marginal or unacceptable, as in (30).

(30) a. That's **not** exactly rocket science.

b. ?That's exactly rocket science.

c. He's **not** exactly beautiful.

d. ?He's exactly beautiful.

Negation can scope either over or under 'exactly'. In (31b), the reading in which negation scopes over 'exactly' is more salient, giving rise to the interpretation that the statement in question was almost but not completely correct. In contrast, in (31c) the reading in which 'exactly' scopes over negation is more salient, meaning that the sentence is interpreted so that the statement in question is exactly not what the speaker was thinking.

(31) a. That's exactly right!

b. Well...that's **not** exactly right. ¬ > exactly

c. Ha! That's **not** exactly what I was thinking. exactly > ¬

When *éppen* gives rise to a precisifying interpretation, it shows the same pattern with negation as English 'exactly'. *Éppen* appears to be able to scope over negation, as in (32). Here, *nem éppen* conveys something like 'not at all' or 'hardly'.

(32) a. Context: I heard that my friend's recital started poorly - the lights didn't work and she dropped her instrument, but she played beautifully. I ask if she felt it went badly, and she says:

Hát, **nem éppen**!
well, NEG ÉPPEN
'*Well, not exactly!*'

b. ?A hang nem volt **éppen** tiszta, miután... az állat nem tud-ta
The voice NEG be.PST.3SG ÉPPEN clean, since... the jaw NEG be.able.to-PST.3SG
mozdítani.
move.INF
'*The voice was not exactly clear, since... he couldn't move his jaw.*'

c. Context: I hear about someone who won the lottery. Knowing that lottery winners often suffer as a result of their windfall, I say:

Ez **nem éppen** szerencsés dolog.
this NEG ÉPPEN lucky thing.
'*It's not exactly a good thing.*'

As with English 'not exactly', some sentences in which *nem éppen* is felicitous are unacceptable without negation, as below.

(33) a. Context: I heard that my friend's recital started poorly - the lights didn't work and she dropped her instrument, but she played beautifully. I ask if she felt it went well in the end, and she says:

#Hát, **éppen**!
well, ÉPPEN
'*Well, exactly!*'

b. #A hang volt **éppen** tiszta, miután... az állat nem tud-ta mozdítani.
The voice be.PST.3SG ÉPPEN clean since the jaw NEG be.able.to-PST.3SG move.INF
#'*The voice was exactly clear, since... he couldn't move his jaw.*'

c. Context: I hear about an acquaintance who won the lottery. I know they really needed the money, so I say:

#Ez **éppen** szerencsés dolog.
this ÉPPEN lucky thing.
'*#It's exactly a good thing.*'

Note that with negation, *éppen* gives rise to a precisifying reading when it occurs with adjectival predicates. No such precisification of adjectival predicates is available with *éppen* in a positive sentence. Likewise, the temporal contingence reading that *éppen* generally gives rise to with stative predicates in positive sentences is unavailable under negation. When *éppen* occurs with verbal predicates and negation, whether an aspectual effect or the precisification effect arises is dependent on whether *éppen* occurs in the preverbal position or elsewhere, as in (34).

(34) a. Context: My mom was impressed that János said he went for a run, but I tell her:

János nem **éppen** fut-ott, hanem inkább sétál-t, amikor
János NEG ÉPPEN run-PST.3SG, but rather walk-PST.3SG, when
meg-láttuk.
PART-see.PST.2PL.
'*János wasn't exactly running when we saw him, but rather walking.*'

b. Context: Mari says we saw János out running, but I point out:

János nem fut-ott **éppen** (akkor), amikor meg-láttuk.
János NEG run-PST.3SG ÉPPEN (then), when PART-see.PST.2PL

'*János wasn't running exactly (then), when we saw him.*'[11]

Temporal contingence and precisification

Éppen can sometimes give rise to multiple effects simultaneously. In sentences where the expression in question is specifying a property that might fluctuate over time, such as vehicle speed or a temporary location ,*éppen* can contribute both precisification and the same kind of temporal contingence effect that we saw in Chapter 3 with stative predicates. This co-occurrence of effects can be seen in (35).

(35) a. Context: As part of a science experiment in school, I must measure the temperature of a solution every 5 minutes. My partner asks what the last recorded temperature was, and I say:

A hőmérséklet **éppen** 50 fok volt.
the temperature ÉPPEN 50 degrees be.PST
'*The temperature was exactly 50 degrees (just then).*'

b. Context: A friend is doing some landscaping around her restaurant. I want to take a small fruit tree she has just removed. She tells me where to find it:

A fa **éppen** az étterem mellett van.
the tree ÉPPEN the restaurant next.to be.NPST.3SG
'*The tree is right next to the restaurant (currently).*'

This conjunction of effects can arise irrespective of *éppen*'s position in the sentence, as in (36).

(36) Context: I am testing the speedometer of my new car by taking readings every 5 minutes. My boyfriend asks what speed was at 6:05. I say:

a. **Éppen** ötvennel ment az auto.
ÉPPEN 50.INSTR go.PST.3SG the car
'*The car was going exactly 50 mph (then).*'

b. Az auto ötvennel ment **éppen**.
the car 50.INSTR go.PST.3SG ÉPPEN
'*The car was going exactly 50 mph (then).*'

c. Az auto **éppen** ötvennel ment.
the car ÉPPEN 50.INSTR go.PST.3SG
'*The car was going exactly 50 mph (then).*'

4.4 The margin effect: a rough sketch

In some circumstances, *éppen* gives rise to an effect reminiscent of the following reading associated with English 'just'.

11 For at least some speakers, *éppen* isn't perfect in these contexts when it seems to involve alternatives to the verb.

(37) a. John **just** passed the exam.

b. The trousers **just** fit in the drawer.

c. The road is **just** visible on the faded map.

I refer to this effect of *éppen*, as in (38), as the 'margin' effect.

(38) Context: I confess to my husband that our son didn't do well on his test.

János **éppen** át-ment a vizsgán.
János ÉPPEN PART-go.PST.3SG the exam.SUP
'*János just passed the exam.*'

I take the margin effect to be a special case of the more general precisification effect that arises with temporal, spatial, and measurement expressions. Thus, the margin effect also arises when the CQ contains alternatives that vary with respect to how narrowly the value along the parameter in question is construed. The margin effect differs from other instances of precisification with *éppen* in that it arises only when the value along the parameter in question marks the threshold between a property holding and not holding, and the property can hold by various margins. That is, the parameter in question for the utterance in (38) is how János did on the exam, the relevant value is the threshold at which János can be said to have passed the exam, and exam-passing can hold by various margins: János can pass the exam with flying colors, by a lot, a little, etc. Only a small subset of predicates meet all these requirements, which substantially limits the range of contexts in which the margin effect can arise.[12]

In (39), the parameter in question is how well the clothes fit in the suitcase. They can fit or fail to fit by various margins: their volume can be very different from the volume of the suitcase, slightly different, or identical.

(39) Context: I complain to a friend that my boyfriend overpacks for trips.

A ruha **éppen** be-fér-t a bőrönd-be.
the clothing ÉPPEN PART-fit-PAST.3SG the suitcase-ILL
'*The clothes just/barely fit in the suitcase.*'

Viewed in this way, the fit of clothing in a suitcase is a parameter that can be measured, just like the parameters associated with temporal, spatial, and measurement expressions. Likewise, the measurement of how well the clothes fit can vary in its precision. The fit of clothes in the suitcase is a measurement of how closely the volume of the clothes matches the volume of the suitcase. Such a measurement can be described as the difference between those numbers. For example, if the volume of the clothes is 3 cubic feet and the volume of the suitcase is 4 cubic feet, then the fit of clothes is off by 1 cubic foot. The alternative set for such a CQ might look something like (40), in which the measurement indicates how closely the clothes fit the suitcase.

(40) CQ = $\{a, b, c\}$
a. $\{w \mid P(w) \wedge \text{the fit is } 0 - 0.1 ft^3\}$
b. $\{w \mid P(w) \wedge \text{the fit is } 0 - 0.5 ft^3\}$

12 Informants report that this use of *éppen* is not clearly productive. Exploring the limits of this effect's range is a task for future research.

c. $\{w \mid P(w) \wedge \text{the fit is } 0-2ft^3\}$

(40a) is the strongest alternative, because all the worlds in which the clothes fit into the suitcase within the narrow range from 0 to $0.1ft^3$ are also worlds in which the clothes fit into the suitcase within the broader ranges from 0 to $0.5ft^3$ and from 0 to $2ft^3$. (40a) is also the alternative in which the clothes fit into the suitcase by the smallest margin. As a result, *éppen* conveys that the property described in the prejacent is intended to be understood as holding by the smallest possible margin. In other words, the clothes *just* fit into the suitcase.

The margin effect can arise with a range of predicate types, including individual-level predicates that do not allow for an inference of temporal contingence because the properties in question are considered permanent, as in (41). In some cases, this effect is best translated into English with 'barely'.

(41) a. Context: I am running lab tests on samples of metal. I tell my labmate:

A fém **éppe**n szennyezett.
the metal ÉPPEN contaminated
'*The metal is (just) barely contaminated.*'

b. Context: János has committed unspeakable crimes. In disgust, I say to a friend:

János **éppen** ember.
János ÉPPEN human
'*János is barely human.*'

c. Context: I look at a faded, antique map of the world, and say to a friend:

Amerika **éppen** felismerhető a térképen.
America ÉPPEN visible the map.SUP.
'*America is just visible on the map.*'

d. Context: My friends are chatting with Mari, who is from Alaska. She doesn't know about a classic American restaurant chain, and someone jokes:

Alaska **éppen** Amerikai.
Alaska ÉPPEN American
'*Alaska is barely American.*'

e. Context: A friend complains that she doesn't want to go to a restaurant that is hours away. I protest, saying:

Az étterem **éppen** kívül esik NY-on.
the restaurant ÉPPEN outside fall.NPST.3SG NY-SUP
'*The restaurant is just outside of New York.*'

Éppen csak and *éppen hogy*

When *éppen* occurs with *csak* 'only' or *hogy* 'that/how', an effect similar to the margin effect arises, as in (42).

(42) Context: I confess to my husband that our son didn't do well on his test.

a. János **éppen csak** át-ment a vizsgán.
János ÉPPEN CSAK PART-go.PST.3SG the exam.SUP
'*János barely passed the exam.*'

b. János **éppen hogy** át-ment a vizsgán.
János ÉPPEN HOGY PART-go.PST.3SG the exam.SUP
'*János barely passed the exam.*'

This use of *éppen csak* and *éppen hogy* is much more productive than the use of just *éppen*. *Éppen csak* and *éppen hogy* can be used with a wide range of predicates, including those that give rise to other effects with *éppen* alone, and those that are infelicitous with *éppen* alone, as in (43).[13]

(43) a. Context: I need to reach something under the fridge. I tell my roommate that I need something at least 10cm long, and grab a pencil. She hands me a yardstick instead, saying:

A ceruzá **éppen csak** 10 centis.
the pencil ÉPPEN CSAK 10 cms
'*The pencil is barely 10 cms.*'

b. Context: Our parents are in their room, talking about taking us to Disneyworld. I run to tell my sister that we can hear them, because the door isn't fully closed. I say:

Az ajtó **éppen csak** nyitva van.
the door ÉPPEN CSAK open be.NPST.3SG
'*The door is (just) barely open.*'

c. Context: I'm teaching a nervous friend to drive, but she doesn't want to drive in the country with winding roads. I plan a route, and reassure her:

Az út **éppen hogy** kanyarodik.
the road ÉPPEN HOGY curve.NPST.3SG
'*The road is barely curved.*'

d. Context: I turn in a news article for my student newspaper, with the layout and pictures included. My teacher critiques my work harshly. She says:

A kép **éppen hogy** elfogadható.
the picture ÉPPEN HOGY acceptable

13 *Éppen hogy* can convey something like 'barely enough', as in (i).

(i) Context: János is the CEO of a company famous for its greed. Although János donates a small percentage of his profit to charity, it seems disingenuous. I complain:

János-ban **éppen hogy** van annyi emberség, hogy pénzt adományozik.
János-INE ÉPPEN HOGY be.NPST.3SG so.much humanity, that money.ACC donate.NPST.3SG
'*János is just barely humane enough to donate money.*'

'*The picture is barely acceptable.*'

The paired examples in (44) illustrate the difference in readings associated with *éppen* alone versus *éppen csak* and *éppen hogy*.

(44) a. (i) Context: I tell my friend that János, a famous actor, has had to gain a lot of weight for a recent role.

János **éppen** kövér.
János ÉPPEN fat
'*János is fat (right now/these days/currently).*'

(ii) Context: A friend complains that János is unhealthily overweight. I argue that this is rude and inaccurate, and say:

János **éppen csak** kövér.
János ÉPPEN CSAK fat
'*János is barely fat*.'[14]

b. (i) Context: I complain about a ball with a small leak. It looks round, but soon it will deflate.

A labda **éppen** kerek.
the ball ÉPPEN round
'*The ball is right now/currently round.*'

(ii) Context: I complain about a ball that is always slightly flat. It doesn't leak, but neither is it completely full.

A labda **éppen hogy** kerek.
the ball ÉPPEN HOGY round
'*The ball is barely round.*'

c. (i) Context: My students are learning about measurements. One reports:

A ceruzá **éppen** 10 centis.
the pencil ÉPPEN 10 cms
'*The pencil is exactly 10 cms.*'

(ii) Context: I need to reach something under the fridge. I tell my roommate that I need something at least 10cm long, and grab a pencil. She hands me a yardstick instead, saying:

A ceruzá **éppen csak** 10 centis.
the pencil ÉPPEN CSAK 10 cms

14 Note that *kövér*, to my knowledge, is not pejorative in Hungarian. The English version sounds rude in a way that the Hungarian version is not.

'*The pencil is just/barely 10 cms.*'

Éppen can occur with both *csak* and *hogy* together, the combination of which also gives rise to a margin effect, as in (45) from Országh, Futász & Kövecses (1953).

(45) Context: My little brother struggles in school. I meet with his teacher, hoping to convince her to arrange some extra help for him. I tell her:

Éppen csak hogy olvas-ni tud.
ÉPPEN CSAK HOGY read-INF can.NPST.3SG
'*He can barely read.*'

In some cases, the particle *még*, meaning something like English 'still', can also combine with *éppen* to give rise to a margin effect, as illustrated below in (46).

(46) Context: My husband and I are decorating. We buy a painting to hang but we aren't satisfied. It doesn't look horrible, but it isn't exactly what we want, either. He says:

A kép **még éppen** jó.
the picture still ÉPPEN good
'*The picture just barely okay/good.*'

In sum, there is a contrast between the productive use of *éppen hogy* and *éppen csak* to give rise to a margin effect with a wide-range of constructions, and the restricted cases for which *éppen* can give rise to a margin interpretation alone. I speculate that these expressions are non-compositional. This is supported by informants, who consistently assert that they have no sense of what each word (*éppen*, *csak*, and *hogy*) contributes to the meaning of the sentence. Extending the analysis of *éppen* to account for these uses (if possible) is a matter for future research.

4.5 Surprisingness and happenstance

Often, utterances containing *éppen* give rise to a sense that the asserted event or state of affairs is surprising, a matter of happenstance, or spontaneous. This is a slippery empirical observation, but what emerges from the data is that sentences with *éppen* are often best rendered in English using expressions like 'happens to', or 'it turned out that' as in (48).[15]

(47) a. Context: I tell a friend how coincidentally, Lilla showed up at the door just as János finished a letter to her.

János **éppen** meg-ír-ta a level-et, amikor...
János ÉPPEN PART-write-PST.3SG the letter-ACC when...
'*(It turned out that) János was just finishing writing the letter, when...*' Telic

b. Context: Context: An acquaintance makes fun of János's inconsistent commitment to vegetarianism.

15 At least some native speakers feel that these English translations may convey a greater sense of unexpectedness than *éppen*, though they agree that some unexpectedness is present (p.c. with Zoltán Szabó).

János mostanában **éppen** eszik hús-t.
János these.days ÉPPEN eat.NPST.3SG meat-ACC
'*(Oh, guess what!) János is eating meat these days.*' Atelic

c. Context: A policeman explains how he was involved in a car chase, and he believed he had lost the quarry until the road straightened and he spotted the car far ahead.

Az út **éppen** egyenes volt.
the road ÉPPEN straight was
'*(It just happened that) the road was straight just then.*' Adjectival

d. Context: All day I've been looking for an object exactly 10cm long. My roommate comes in, points to my desk, and says:

A ceruzá **éppen** 10 centis.
the pencil ÉPPEN 10 cms
'*(It just happens that) the pencil is exactly 10 cms.*' Measure expression

e. Context: Our train system has much improved in the last year. I tell friends that I'm impressed - the train I take home is always punctual.

A vonat **éppen** 3-kor érkezik.
the train ÉPPEN 3-TEMP arrive.NPST.3SG
'*(It just so happens that) the train arrives at exactly 3.*' Temporal frame

f. Context: My son's toys are scattered about the yard. His friend asks me where things are, but it's a mess. I think I remember where the ball is. I tell him:

A labda **éppen** a fa előtt volt.
the ball ÉPPEN the tree in.front be.PST.3SG
'*(It turns out that) the ball happens to be right in front of the tree.*' Spatial

g. Context: János is great at math, but our teacher is giving out a very hard test. János took it this morning, and my class takes in this afternoon. I nervously tell my friend:

János **éppen** át-ment a vizsgán.
János ÉPPEN PART-go.PST.3SG the exam.SUP
'*(Guess what,) János barely passed the exam.*' Margin reading

The examples in (48) all exhibit both the surprisingness effect and another of *éppen*'s effects simultaneously. Thus it seems that *éppen* is frequently used to give rise to any of a range of effects when the prejacent is not taken to be expected or otherwise likely. A subset of these cases are unlikely, or surprising.[16]

Further, there is some evidence that *éppen* cannot be used when the prejacent is already planned for or immediately expected. As an example, let us imagine a context in which it is expected that the height of a building is 525 meters given prior design decisions and all interlocutors are aware of this. If upon the

16 Although this sense of surprise or unplannedness is frequently seen with *éppen*, a proposition need not be surprising in order for *éppen* to be felicitous: most of the previous examples in this chapter and Chapter 3 are felicitous and do not involve this effect.

building's completion, it is confirmed that it meets the expectation of being 525 meters, it is infelicitous to report this using *éppen*, as in (48b).

(48) a. Ahogy az várható volt, az épület 525m magas.
as the expected was, the building 525m tall
'*As expected, the building turns out to be 525m tall.*'

b. #Ahogy az várható volt, az épület **éppen** 525m magas.
as the expected was, the building ÉPPEN 525m tall
'*As expected, the building turns out to be (exactly) 525m tall.*'[17]

In at least some cases, *éppen* can also contribute this sense of happenstance or surprisingness without giving rise to any of its other effects, as in (49), in which Frici is focused. *Éppen* conveys only that Frici's attendance is unexpected or unplanned. The focus on Frici conveys that no one else came to the party.[18] Uses of this nature, where *éppen* conveys unexpectedness and nothing more, seem rare but possible.

(49) Context: Frici and his brother don't get along, so they have a policy of never attending the same party. A friend asks which one attended last Friday's party. I say:

Éppen Frici jött a buli-ba.
ÉPPEN Frici come.PST.3SG the party-ILL
'*It happened to be Frici who came to the party.*'

The fact that *éppen* can give rise to the surprisingness effect alone indicates that this is not a secondary effect, but rather must directly result from a component of *éppen*'s meaning.

I suggest that the unacceptability of (48) in the described context falls out from the semantics of *éppen*, and requires no additional machinery. Specifically, the truth of the prejacent is part of *éppen*'s assertion (repeated in (50)).

(50) $[\![\textit{éppen}]\!] = \lambda p \,.\, \lambda w : \textsc{str}_s(p)(w) \,.\, \textsc{ident}_s(p)(w)$

Assuming that the speaker is a rational conversational partner, the truth of the prejacent is therefore new information: it is not part of the common ground, and cannot be reliably inferred from what is in the common ground. This is compatible with the fact that *éppen* is infelicitous if the truth of the prejacent is expected or planned for, as in (48b). Any additional surprisingness is a matter of the interlocutors' expectations and beliefs about the prejacent, which is new information.

17 Thanks to an anonymous reviewer for pointing out that (48b) would be felicitous in a different context with a precisifying (and *not* a surprisingness) reading. For example, if there is a law requiring higher taxes to be paid for any building taller than 525m, a speaker could utter (48) felicitously when it is expected that the building (due to the same prior design decisions) will be 525m tall. This might seem like a problem for the claim that *éppen* is best used when the prejacent is not known or inferable. I suspect, however, that if (48) is uttered in a context where said taxes are a concern, there is some doubt as to whether the planned height was actually achieved. Because the taxes require precise measurements, the conversational participants may have needed to confirm the exact height, licensing *éppen*'s use as a precisifier. In this case, there would be no surprisingness, but the prejacent is still new information: it was not known, nor could it have been inferred with enough accuracy to ensure that the higher tax bracket was avoided.

18 Following Onea & Beaver (2009), I take the preverbal focus position not to be exhaustive but to give rise to some exhaustivity inferences, the details of which remain unresolved in their work. The possible effect of *éppen* on these inferences is also an open question, though (49) constitutes the only clear example I have seen thus far of an interaction between focus generated in the focus position and *éppen*.

Imagine that in a given context, there is a CQ = $\{a, b, c\}$, and c is determined to be the strongest, true construal of the prejacent. In contexts in which the participants have an expectation that another alternative (a or b) is the strongest true alternative, the assertion that c is the 'winner' gives rise to surprise or unexpectedness. The happenstance effect can arise in any situation in which there is no plan in place for c to come to pass, but it does nevertheless, as in (48a). In short, the effects of surprisingness, happenstance, and unexpectedness are dependent on two factors. The first is what expectations or knowledge the interlocutors have about the likelihood of c being the strongest, true alterative. The second is that the truth and strength of the winning alternative are not established in the presupposition, but in the assertion. This means that the information conveyed by c should not be part of the common ground at speech time. Otherwise, uttering the *éppen* sentence would not be informative. This allows for the truth of the prejacent to be surprising or unexpected.

This surprisingness effect also arises with English IT-clefts, for which the truth and strength of the prejacent are also part of the at-issue content, not the presupposition. In contrast, this effect does not arise with 'only', because the truth of the prejacent is part of the presupposition for 'only', meaning that the truth of P cannot be new information. This distinction can be seen in (51), which the exclamation 'Guess what?!', which serves to indicate that new and possibly surprising information is about to be conveyed, is only felicitous with the IT-cleft, and not with only.

(51) a. Guess what?! **It was** János who ate all the meatloaf, even though he is vegetarian!

b. #Guess what?! **Only** János ate all the meatloaf, even though he is vegetarian!

As part of the assertion, both the truth of P and its strength relative to other alternatives is, or at least can be, new information for both *éppen* and English IT-clefts, and as new information the truth of P can be surprising or unexpected, depending on the expectations and prior knowledge of the interlocutors. Thus the 'surprisingness/happenstance effect', which we have seen can (optionally) occur with any of the uses and constructions that *éppen* occurs with, falls out naturally from the interaction of the semantics of *éppen* with properties of the context of utterance.

4.6 Conclusion

In this chapter, we have explored three non-aspectual effects that *éppen* gives rise to in a variety of contexts. As *éppen* occurs with a wide range of constructions and gives rise to a curiously diverse set of effects, I proposed that an analysis of *éppen* as a discourse particle is needed. *Éppen*'s diverse effects were accounted for in Chapter 3 with the framework begun in Beaver & Clark (2008), in which *éppen* presupposes the existence of a unique strongest alternative to the current question, and asserts that the prejacent be interpreted as that alternative. The result of this is that *éppen* gives rise to different effects depending on the nature of the current question. As we saw in Chapter 3, if the CQ asks about the reference interval, an aspectual interpretation arises. With telic predicates, a completive reading arises. With atelic predicates, an ongoing reading arises, and with stative predicates, an inference of temporal contingence arises. In this chapter, we saw that precisifying readings arise when *éppen* occurs with measure expressions, temporal frames, and spatial frames. In these cases, the CQ asks about the value along some parameter of measurement. Margin readings are available when the CQ asks about the margin by which the predicate holds, and when the strongest true alternative is also the one with the smallest margin, the margin reading arises. Surprisingness and happenstance are inherently compatible with the fact that the truth of the prejacent is part of the assertion, and so is new information.

This analysis allows for the capture of diverse effects that have not previously been thought to be connected, e.g. aspectual marking and precisification, in a unified analysis. This has implications both for

an understanding of aspectual systems and for the understanding of discourse effects and the functions of discourse particles. This analysis adds to our emerging understanding of how tense and aspect distinctions are made cross-linguistically, and it adds to work endeavoring to explore the role of context in determining meaning.

Chapter 5

The semantics of future temporal reference in Hungarian

5.1 Introduction

Future temporal reference in Hungarian can be conveyed with a simple Non-past sentence as in (1a), or with a Non-past sentence containing the verb *fog*, as in (1b) (I will refer to future-referring sentences likes these as 'Non-past' and '*fog*' sentences, respectively).

(1) Context: A friend says, 'we are making some plans to celebrate Zsuzsa's birthday...

a. Laci **süt** egy tortát.
Laci bake.NPST.3SG a cake.ACC
'*Laci will bake a cake.*' Non-past

b. Laci süt-ni **fog** egy tortát.
Laci bake-INF FOG.NPST.3SG a cake.ACC
'*Laci will bake a cake.*' *fog*

This chapter takes a detailed look at the distribution of *fog* and the Non-past in realizing future temporal reference. The goal is to explore the interaction between context and the truth-conditional and lexical semantic properties of the predicate as factors in the distribution of the Non-past and *fog* in future-referring utterances. I suggest that if the role of these factors is sufficiently spelled out, an account of this distribution is possible with a relatively simple semantics for the expressions involved.

The auxiliary verb *fog* gives rise to future temporal reference obligatorily, as in (1b). The Non-past, on the other hand, is associated with a number of distinct readings depending on the aspectual properties of the predicate with which it combines, including event-in-progress readings, characterizing readings, continuous readings, and perfective readings with present temporal reference (see §2.3, 2.4 and 3.3.1). In some circumstances, the Non-past can also convey future reference, as in (1a). Properties of the context, the presence or absence of temporal frame expressions, and these aspectual properties determine the range of circumstances in which the Non-past is available to convey future reference. For example, a Non-past sentence containing a telic predicate can easily give rise to a future reading as in (1a). In contrast, a sentence containing a durative atelic (activity) predicate can give rise to a present event-in-progress reading or a characterizing reading as in (2a), but future-referring readings are often marginal without explicit mention of future reference, such as with a temporal frame expression as in (2b).

(2) a. (i) Context: A friend comes to the door and asks what my brother Miki is up to. He is working on a letter-writing project for school, so I answer:

Miki egy level-et **ír**.
Mike a letter-ACC write.NPST.3SG
'*Mike is writing letters.*' Event-in-progress

(ii) Context: A friend wants to know about Mike's hobbies.

Miki egy level-et **ír**.
Mike a letter-ACC write.NPST.3SG
'*Mike writes letters.*' Characterizing

b. Context: A friend wants to know what Mike's plans are.

(i) ?Miki egy level-et **ír**.
Miki a letter-ACC write.NPST.3SG
'*Miki will write a letter.*'[1]

(ii) **Holnap**, Miki egy level-et **ír**.
tomorrow Mike a letter-ACC write.NPST.3SG
'*Tomorrow, Mike will write a letter.*' Future-referring

The limitations on the circumstances in which the Non-past can give rise to future reference factor into whether speakers choose the Non-past or *fog* in a given situation. §2 establishes that existing analyses of future reference in English cannot account for the Hungarian facts. §3 offers a semantics for the Non-past and *fog*. I argue that *fog* is a modal verb that is restricted to taking a metaphysical modal base. I suggest that the only effect of *fog*'s modality is that it is obligatorily associated with future reference. In contrast, the Non-past tense is compatible with both present and future temporal reference. This small-seeming temporal difference has substantial effects on the division of labor between the Non-past and *fog*. One such effect is that sentences containing stative predicates require *fog* in order to be interpreted as future-referring. No matter how clear the context, the Non-past can never give rise to readings with future temporal reference in utterances containing stative predicates, even in the presence of future-referring temporal frame expressions, as in (3).

(3) Context: I'm talking with a friend who currently lives in the country about how she doesn't like the rural lifestyle. She is determined that she will move to a city at some point, so she utters:

a. #Döntöttem. Lak-ok NY-ban (jövőre)!
decide.PST.1SG. live-NPST.1SG NY-INE (next.year)
'Intended: *I've decided. I will live in New York next year!*'

1 In this chapter and in Chapter 6, I will use # to indicate unacceptability of sentence in a given context, and ? to indicate that a sentence is dispreferred in a context relative to an alternative construction (e.g. the Non-past is dispreferred relative to *fog* for expressing future reference in some context). A sentence is marked as dispreferred when speakers are given a choice between two or more utterances that are all judged to be true, grammatical, and semantically interpretable in a given context, but a strong majority of speakers indicate a preference for a given utterance over alternatives: those alternatives not chosen are marked dispreferred with ?.

b. Döntöttem. **Fog-ok** lak-ni NY-ban (jövőre)!
decide.PST.1SG. FOG.NPST.1SG live-INF NY-INE (next.year)
'*I've decided. I will live in New York (next year)!*'

In §5 I suggest two possible but imperfect approaches to accounting for the pattern in (3), both relying on speaker reasoning (based on Gricean maxims) about the relative importance of various properties of the constructions in question.

§6 discusses distributional asymmetries between future-referring Non-past and *fog* sentences containing dynamic predicates. Most future-referring sentences with durative dynamic telic predicates contain just the Non-past, while the majority of future-referring sentences containing atelic and non-durative telic predicates contain *fog*. I suggest that when the Non-past is compatible with a wide range of aspectually and temporally distinct readings, the Non-past alone is not sufficient to convey future temporal reference: clear contextual clues, future-oriented temporal frame expressions, or *fog* are needed.

§7 concludes with a summary and a brief look ahead at Chapter 6, which explores distributional effects that arise between future-referring utterances containing the Non-past and *fog* in a variety of speech acts.

5.2 Applying literature: what do accounts of English future reference offer for Hungarian?

The way we talk about the future has been a topic of increasing interest to linguists and philosophers in recent years, and a range of analyses of English future reference have emerged. In some cases, authors predict that certain features of their accounts should hold cross-linguistically. Below, I look at a few representative accounts to determine whether such analyses can offer insight into the way future reference is expressed in Hungarian.

§2.1 introduces three semantic categories of future reference that appear repeatedly in the literature via Dahl (2000): intention-based, prediction-based, and scheduling. Dahl proposes that this classification offers insight into how future markers emerge over time. In §2.2, I introduce the claim from Copley (2009) that future reference with dedicated overt marking is associated with a wide range of readings, while future reference without overt marking is frequently restricted to scheduling readings. Copley suggests that this may hold cross-linguistically. In §2.4 I introduce the notion of settledness via Kaufmann (2002). Kaufmann argues that settledness or something like it is needed for any analysis of future marking.

5.2.1 Predictions, intentions, and schedules

Dahl (2000) proposes that it is useful to distinguish between future-referring utterances that are prediction-based and those that are intention-based because it can offer insight into how future markers develop over time. For Dahl, 'intention-based future time reference' typically arises when the speaker of an utterance is the subject and agent, and prediction future time reference arises when the speaker is not the agent, as in the following examples that Dahl borrows from Alice in Wonderland in Dahl (2000: 310):

(4) a. **Intention-based future time reference:**

> 'I know something interesting is sure to happen,' she said to herself, 'whenever I eat or drink anything; so **I'll just see** what this bottle does.

b. **Prediction-based future time reference:**

> There was nothing else to do, so Alice soon began talking again. '**Dinah'll miss** me very much to-night, I should think!'

Dahl also introduces the notion of scheduling as a relevant parameter for future reference, as evidenced by the case of the English Present, which tends to be used to indicate scheduled future events, as in (5a) from Dahl (2000: 311), but not non-schedulable events, as in (5b).

(5) a. [According to the timetable] the train leaves at noon.

b. #It rains tomorrow.

Dahl remarks in Dahl (2000: 311) that, '...in many, if not most languages, this kind of sentence is treated in a way that does not mark it grammatically as having non-present time reference'. This implies that scheduling is a factor for future reference without overt future marking (e.g. like the English Present and Hungarian Non-past). Dahl acknowledges that a number of European languages (unlike English) can also use the Present for future reference, especially with movement verbs and the very near future. Based on this, he suggests that the Present can be used in just those cases where the speaker is already making some preparations. This contrasts with Hungarian, in which the Non-past and *fog* can be used equally well for distant future utterances, particularly when temporal frame expressions clearly pick out the reference interval:

(6) Context: In October, I describe my plans for after I finish my dissertation:

a. **Jövö Szeptember-ben** olvas-ok sok-at.
next September-INE read-NPST.1SG a.lot-ACC
'*Next September, I'm going to read a lot.*'

b. **Jövö Szeptember-ben** olvas-ni **fog-ok** sok-at.
next September-INE read-INF FOG-NPST.1SG a.lot-ACC
'*Next September, I'm going to read a lot.*'

Dahl observes that categorizing future-referring utterances based on intentions and predictions does not reflect a consistent difference in the strategy used to express future temporal reference cross-linguistically. That is, languages do not consistently use different strategies to express predictions vs. intentions. Dahl claims that instead, there is a tendency for markers of intention to develop into general future markers that can express both intention and prediction-based future reference:

> A straightforward grammatical opposition based on the distinction between intention-based and prediction-based FTR [future time reference] is less common than one would perhaps think in view of the apparent cognitive salience of that distinction. Its importance lies rather in the observation that markers that are originally restricted to intention-based FTR tend to develop into general future markers, which include prediction-based FTR as central cases but can in the normal case still be used for intention-based FTR. In fact, whether FTR is overtly and obligatorily marked in prediction-based sentences can be used as one of the major criteria for whether it is grammaticalized in a language or not. (Dahl 2000: 310)

In a sense, Dahl is proposing that synchronic snapshots of how future-reference is accomplished in European languages might suggest patterns of language change: specifically, that grammaticalized marking of future temporal reference can develop out of expressions conveying speaker intention. In turn, an understanding of this diachronic trajectory can inform analyses of the division of labor between future-referring expressions in languages with multiple strategies for future reference. However, the Hungarian

facts do not conform to this pattern. Though Hungarian is briefly discussed in Dahl (2000) with reference to Csató (1992), only *fog* is mentioned. There is no discussion of future-referring uses of the Non-past, nor whether the distinction between intention and prediction-based future temporal reference is relevant for Hungarian.

Synchronically, there is no evidence from data collected in the development of this thesis that the distinction Dahl proposes applies to Hungarian. Both the Non-past and *fog* can be used equally well for intention and prediction-based future temporal reference, as shown in (7) with both scheduled and unscheduled predictions.

(7) a. **Intention-based future time reference:**

(i) Context: My friends are planning to go out after a birthday party. I tell them I won't be joining them.

Haza-megy-ek a buli után.
PART-go-NPST.1SG the party after
'*I will go home after the party.*'

Fog-ok haza-menni a buli után
fog-NPST.1SG PART-go.INF the party after
'*I will go home after the party.*'

b. **Prediction-based future time reference:**

(i) Context: My friend answers my question of when we should meet at the train station for our trip.

3-kor indul a vonat.
3-at set.out.NPST.3SG the train
'*The train leaves at 3.*'

3-kor indul-ni **fog** a vonat.
3-at set.out-INF fog.NPST.3SG the train
'*The train will leave at 3.*' Scheduled

(ii) Context: There's been a drought, and I'm worried about our crops. My sister has more faith, and is confident that we don't need to worry. She says:

Esik az eső.
fall.NPST.3SG the rain
'*It will rain.*'

Es-ni **fog** az eső.
fall-INF fog.NPST.3SG the rain
'*It will rain.*' Unscheduled

On the diachronic side, *fog* is hypothesized to have developed from the lexical verb *fog* and its meaning

'take, seize' (Dahl 2000; Csató 1992). These uses of *fog* suggest an agentive subject, but unlike Dahl's intention-based future markers, the lexical use of *fog* is not limited to only utterances involving speaker intention, at least not at present.

In short, the properties that Dahl uses to categorize future-referring utterances do not seem applicable to the Hungarian case in any way that can help to elucidate the patterns between the Non-past and *fog* as they are used in future-referring utterances.

5.2.2 Futurates and futures

It has been observed by many authors that future-referring expressions can be divided into two categories based on whether or not the means by which future reference is conveyed is 'obvious' (Copley 2009: 15). As far as I can make out, this distinction is, at least on the surface, about whether future reference is overtly marked by some grammaticalized element in the sentence.[2] It is generally accepted that in English there are two kinds of constructions that give rise to futurate readings, and two that give rise to future readings:

(8) Context: I tell my mom about my friends' weekend plans.

a. **Futurates:**

(i) Sasha goes dancing tomorrow at 3. Simple Present

(ii) Marco is playing soccer this weekend. Present Progressive

b. **Futures:**

(i) Ann is going to attend the ballet this evening. 'be going to'

(ii) Alexia will walk the dogs after dinner. 'will'

The Hungarian Non-past can give rise to future temporal reference, and it does not involve an overt morphological marker of temporal reference (as mentioned in §1 and discussed in detail in Chapter 2), it falls into Copley's futurate category. Because *fog* gives rise to future temporal reference and involves a clear morphological marker associated with that temporal reference, it is considered a future under Copley's analysis.

(9) Context: I tell my mom about my friends' weekend plans.

a. **Futurates:**

2 The future/futurate distinction hinges on whether the futurity is expressed with an overt, grammaticalized marker. A slightly different metric might be that to distinguish utterances that are merely compatible with future reference from those for which it is obligatory. This is very close to but not quite the same as the futurate/future distinction given that 'be going to' is a prospective aspect marker and thus compatible with past temporal reference, and yet is considered a future marker (because the means of accomplishing future reference is the overt expression 'be going to'). A third similar metric is a division based on whether a future reading arises in a construction that has some other major function in the language, or whether the construction is dedicated solely or predominantly to marking future reference (however one might want to determine what counts as predominantly dedicated). Unfortunately, none of these ways of differentiating between future-referring utterances are particularly illuminating for the Hungarian case.

(i) Agi tancol holnap 3-kor.
Agi dance.NPST.3SG tomorrow 3-TEMP
'*Agi dances tomorrow at 3.*' Non-past

b. **Futures:**

(i) Anna fog menni a ballet-ba ma este.
Anna FOG.NPST.3SG go.INF the ballet-ILL today evening
'*Anna will go to the ballet this evening.*' *fog*

The distinction between futurates and futures has so far been described morphologically. However, the two categories differ interpretively as well. Copley follows many before her in labeling the readings that arise from these two types of constructions 'futurates' and 'futures', respectively.[3] Futurates can often (if not always) give rise to non-future readings in the right context, and so Copley (2009) argues that futurates require the time of the eventuality to be specified, either contextually or via the presence of overt temporal frame adverbials. Because the Hungarian Non-past is morphologically a futurate, and it allows for event-in-progress and characterizing readings, Copley's claim holds for the Non-past as it does for English futurates: if the reference interval is not specified in some manner, future readings do not arise. We will see the repercussions of this in §5, which discusses the fact that the Non-past cannot give rise to future reference in sentences containing activity and achievement predicates unless a future reference is specified.

Copley argues that futurates must be planned, scheduled, or otherwise believed to be decided at speech time as in the examples in (10).

(10) **Futurates: require a plan**

Context: I tell my mom about some things that are going to happen this weekend.

a. Alex is playing piano tomorrow.

b. The Red Sox play the Yankees tonight. Planned

c. #The Red Sox defeat the Yankees tonight.

d. #It is raining tomorrow. Unplanned

Futures do not exhibit this requirement, as in (11).

(11) **Futures: do not require a plan**

Context: I tell my mom about some things that are going to happen this weekend.

a. Alex will play piano tomorrow.

b. The Red Sox are going to play the Yankees tonight. Planned

3 Specifically, she follows Lakoff (1971), Prince (1973), Huddleston (1977), Dowty (1979), Binnick (1991), Landman (1992), Bybee, Perkins & Pagliuca (1994), Portner (1998), Dahl (2000), Cipria & Roberts (2001) Smith (2010), and surely others in using this terminology.

c. The Red Sox are going to defeat the Yankees tonight.

d. It will rain tomorrow. Unplanned

A primary goal of many, if not most, accounts of future reference in English is to account for this pattern.[4]

Copley's goal is to understand and account for the difference in (10). Crucial for the topic here is that the requirement for a plan is particular to English: it does not apply in Hungarian. The Non-past does not require a plan in order to be felicitous with future reference, as in (12).

(12) **Hungarian futurates: do not require a plan**

a. Context: I remind a friend about my son's recital.

Alex zongorázik holnap.
Alex play.piano.NPST.3SG tomorrow
'*Alex plays the piano tomorrow.*'

b. Context: I tell my friend that there is a big baseball game tomorrow.

A Red Sox **játszik** holnap!
the Red Sox play.NPST.3SG tomorrow
'*The Red Sox play tomorrow!*' Planned

c. Context: I let everyone know I'm confident in my team's ability to win tomorrow's game.

A Red Sox **nyer** holnap!
the Red Sox win-INF tomorrow
'*The Red Sox (will) win tomorrow!*'

d. Context: I explain why we should reschedule tomorrow's picnic.

Esik az eső holnap.
fall.NPST.3SG the rain tomorrow
'*It (will) rain(s) tomorrow.*' Unplanned

---

4 Actual uses of (10d) are uncommon but do exist. Google hits, after eliminating results containing 'if' and 'unless', quite consistently involve utterances in which the speaker is making a plan contingent on (or maybe around) rain, as in (i).

(i) a. #It is raining tomorrow! Open gym 11:00am-12:00pm. Get the energy out!!

b. #Yes it is raining tomorrow. Yes we are still in the park. Bring something you can get wet and bring gloves, water and a towel, we will do abs but not on the ground!

c. #Tonight it is raining, tomorrow it is going to be 60, what does everyone have planned?!?!

Note that even in these cases, it is not the rain that is planned but activities that may be influenced by weather conditions. Oddly, at least the first several such hits all involve people who seem excited, and are discussing physical activities. It would surely prove interesting to explore this further.

Fog does not require a plan in order to be felicitous either, as in (13).

(13) **Hungarian futures:**

a. Context: I remind a friend about my son's recital.

Alex zongoráz-ni fog holnap.
Alex play.piano.INF FOG.NPST.3SG tomorrow
'*Alex plays the piano tomorrow.*'

b. Context: I tell my friend that there is a big baseball game tomorrow.

A Red Sox **játszani** fog holnap!
the Red Sox play.INF FOG.NPST.3SG tomorrow
'*The Red Sox play tomorrow!*' Planned

c. Context: I let everyone know I'm confident in my team's ability for tomorrow's game.

A Red Sox nyer-ni **fog** holnap!
the Red Sox win-INF FOG.NPST.3SG tomorrow
'*The Red Sox will win!*'

d. Context: I explain why we should reschedule tomorrow's picnic.

Es-ni fog az eső holnap.
fall.INF FOG.NPST.3SG the rain tomorrow
'*It will rain tomorrow.*' Unplanned

Most of Copley's analysis, including her proposal that futurates require some direction: i.e. the existence of a plan or some universal or societal law that governs the future-referring eventuality, hinges on the difference in interpretation between futurates and futures illustrated in (10). The Hungarian facts suggest that Copley's analysis is particular to English. Though she notes a number of parallels apparent from a range of languages, Hungarian seems to conform to none of the patterns she discusses but the most basic one: there are both futurate and future readings in both English and Hungarian. Beyond this, the Hungarian and English facts diverge.

5.2.3 Settledness

The above classifications of future reference have yielded little in the way of an explanation for the Hungarian facts. This has helped to eliminate some possibilities from consideration: Hungarian is not like many European languages which developed future markers from expressions conveying speaker intention. Further, it is not like English and other languages that require schedules or plans in order for Non-past or Present tenses to convey future reference. Now we can turn to Kaufmann (2002) for an understanding of settledness, which influences not only the patterns described above, but the Hungarian patterns as well.

Kaufmann (2002) provides an account of differences in interpretations associated with two kinds of English indicative conditionals: those in which the antecedent carries Past tense marking, and those in

which it carries Present tense marking.[5] In order to support his analysis, Kaufmann defines two notions important in any discussion of future reference: settledness and assertability. He proposes how these concepts are relevant for 'naked present' sentences (sentences with Present marking and no aspectual markers or modal verbs) and sentences containing 'will'.

Settledness can allow us to distinguish between an 'open' future, for which we cannot determine the truth or falsity of a given proposition, and a 'closed' past. We can consider time as consisting of a set of trajectories (really a set of worlds) that are identical up until the present moment, and may diverge after. In Kaufmann (2002: 5), these trajectories are referred to as 'possible histories', and defined as in (14).

(14) A *possible history* may be represented as a function h from times to sets of worlds such that $h(t') \subseteq h(t)$ whenever $t < t'$.

Thus as time progresses, more and more possible histories are eliminated. Kaufmann (2002: 5) defines settledness as:

(15) A sentence is settled at $w \in h(t)$ iff it is true not only at w but at *all* worlds in $h(t)$.

This means that something is settled if it happens in every possible future. On this view, because the segments of possible histories that are before now are all identical, everything that happened in the past is settled. When it comes to past events or states, then, we consider a proposition true if it is settled. However, speakers do not know everything about the past, let alone the future. For Kaufmann in Kaufmann (2002: 6), a speaker's knowledge can be represented as a set K_t of worlds. This set is an equivalence class of epistemic alternatives: they agree with respect to what is known. A sentence is known at $w \in K_t$ if it is true in all worlds in K_t. The subjectivity is described as follows:

(16) a. The agent knows that she lives in a possible world (K_t is non-empty);
b. she is not able to presage history (there is no h such that $h(t) \cap K_t$ is a non-empty proper subset of $h(t)$)

(16b) captures that a speaker can only know what is settled at a given time. That is, a speaker cannot 'cut across' objective histories: they cannot have some worlds that are equivalent up until t in their knowledge set at t, while excluding others.

If a speaker can know only that which is settled, how can future claims be made? Kaufmann claims that speakers can presume that something is settled, without knowing which way it is settled. This, he suggests, is what we are doing when we make claims about the future. A sentence is presumed settled in K_t iff its truth value is constant 'locally' within each $h(t) \subseteq K_t$. Further, Kaufmann claims in Kaufmann (2002: 9) that we can only assert that something is true if we believe it to be settled:

(17) A non-modalized sentence is assertable at w,t if and only if it is settled at w,t.

This predicts that 'naked present' sentences can only be asserted if, to the best of a speaker's knowledge, P is settled. Kaufmann claims that the 'scheduling' reading, in which the naked present is used with future temporal reference as in (18) from Kaufmann (2002: 2), involves an implicit relativizing expression like 'in view of what the schedule says'. This, he argues, introduces a set of alternatives very like the sets of worlds introduced for modals, but in this case composed of historical alternatives. The assumption is then that in all the futures in which the schedule is adhered to, the subject submits his paper. That is, with such a relativization, a kind of restricted settledness is possible.

5 Kaufmann (2002) does not discuss non-past temporal reference explicitly, but we can understand the English Present as expressing non-past temporal reference in that it is compatible in at least some contexts with either present or future temporal reference.

(18) He submits his paper to a journal.

Though Kaufmann does not make this explicit, this analysis seems to predict that any and all non-modal future-referring utterances must involve either some restriction on the set of alternatives under consideration that allows the proposition to be viewed as settled by the speaker, in order to adhere to (17), or it must in fact involve some implicit or covert modality.

In order to account for future-referring uses of 'will', which allow for future-reference in a much wider range of cases than the naked present, Kaufmann argues that 'will' does not require that a sentence need to be settled in order to be asserted, but merely close to settled. This amounts to 'will' conveying something like that a proposition is 'true enough'.[6]

How does this relate to the Hungarian data? Both the Non-past and *fog* can be used to convey future reference when no plan or schedule is in place. That is, they seem to function more like 'will', which allows for a wider range of readings, than like the English Present. This will be accounted for in the case of *fog*, which I will propose involves a modal component that ensures future reference, to be discussed in §4. I posit in §3 that the Non-past is a tense, making no mention of a modal component. It is possible that the Non-past in Hungarian is like Kaufmann's take on English 'will' in that it can be used when a proposition is 'true enough'. Or perhaps, when the Non-past is used for future assertions, the reference to alternatives arises in some other way (e.g. like Kissine (2008) proposes for English 'will'). If Kaufmann is right, it is not immediately clear how best to account for the difference in the range of readings associated with the English Present versus the Hungarian Non-past with respect to future reference. There is no evidence that the Hungarian Non-past is restricted to conveying settled propositions, but there is also no (other) evidence that involves a modal component. Kaufmann's claim that future markers must be modal is not novel, but it is also not uncontroversial. In the case of English 'will', many if not most authors are agreed that there is a modal component to its meaning. Kissine (2008), for example, points out that this is the perspective of a majority of work on 'will', including Palmer (2001); Smith (1978); Enç (1996); Yavaş (1982); Jaszczolt (2005); Haegeman (1983); Sarkar (1998); Condoravdi (2002); Copley (2009). Arguments against this position exist, however, including Kissine (2008) itself. Kissine (2008) argues that English 'will' is just a future tense whose meaning expands the evaluation time of the event forward into the future. He is against the view that 'will' is a modal, but it is worth noting that despite the fact that he accounts for the temporal properties of 'will' without a modal, even Kissine is forced to posit a covert modal operator which scopes over 'will' in order to capture the fact that future reference requires a modal component. Similarly, Del Prete (2013) posits that 'will' is a true future tense without a modal component, and modality arises in future-referring utterances containing 'will' because it is necessarily a consequence of the branching structure of future time (Kaufmann 2002; Condoravdi 2002). The position that constructions which give rise to future temporal reference necessarily involve modality extends to futurates (recall that futurates are future-referring expressions with no overt future marking). Copley (2009) argues for the necessity of a modal component in the meaning of future-referring uses of the English Simple and Progressive Present, saying that, 'it is quite impossible to do without modality in the meaning of futurates', and Dowty (1979) and Cipria & Roberts (2001) offer two other accounts of 'futurates' which depend on modality. For the present work, I leave how the Non-past resolves this issue an open question. It is a matter for future research.

6 Kaufmann points to probabilistic analyses like Lewis (1981) and McGee (1994).

5.3 Semantics

5.3.1 Aspectual operators

As discussed in Chapter 2 §4, I take Hungarian to have covert imperfective and perfective operators.

Imperfective

I borrow a semantics for the imperfective operator from Deo (2009b, 2015). The basic ontology assumed here was introduced in Chapter 4. The notions required for defining the imperfective operator are given below.

Instantiation of predicates at a time and world is specified in terms of the COINcidence relation, defined as in (19). A predicate of events $P^{\mathscr{E}}$ stands in the coincidence relation with an interval i and a world w iff there is a P event in every inertial alternative of w within or at some superinterval of i (this is captured with the temporal overlap relation $\circ$). A predicate of intervals $P^{\mathscr{I}}$ or of states $P^{\mathscr{S}}$ stands in the coincidence relation with i and w iff the predicate holds throughout i in w.

(19) $$\text{COIN}(P,i,w) = \begin{cases} \forall w' \in Hist_{inr}(w) : \exists e[P(e)(w') \wedge \tau(e) \circ i] & \text{if } P \subseteq \mathscr{E}^{\mathscr{E}} \\ P(i)(w) & \text{if } P \subseteq \mathscr{I} \text{ or } \mathscr{E}^{\mathscr{I}} \end{cases}$$

A regular partition is defined in (20). For any interval i, a partition of i is the set of non-empty, mutually exclusive, and collectively exhaustive subsets of i.

(20) **Regular Partition**:
$\mathscr{R}_i$ is a regular partition of i if $\mathscr{R}$ is a set of intervals {j,k...n} such that:
a. $\cup\{j,k...n\} = i$
b. $\forall\, j,k \in \mathscr{R}_i \rightarrow j \cap k = \varnothing$ if $j \neq k$
c. $\forall\, j,k \in \mathscr{R}_i \rightarrow \mu(j) = \mu(k)$ (where $\mu(x)$ stands for the Lebesgue measure of x)

Each subset of $\mathscr{R}_i$ will be of the same length, the measure of which is known as the partition measure. Intuitively, a regular partition of i is a set of non-overlapping segments of i that add up to the whole.

The operator IMPF combines with a predicate of eventualities or intervals P and an interval i, and returns the proposition that there is some (super)interval j that contains i such that every cell k in a regular partition $\mathscr{R}^c_j$ of j COINcides with P. The partition measure is determined by what is appropriate in a given context and properties of the event description.

(21) $$\text{IMPF}: \lambda P \lambda i \lambda w\,.\, \exists j\,[\, i \subseteq_{ini} j \wedge \forall k\,[\, k \in \mathscr{R}^c_j \rightarrow \text{COIN}\,(P,k,w)\,]\,]$$

This definition of the imperfective operator predicts that event-in-progress and characterizing readings arise depending on the granularity of the partition measure relative to the length of j, i, and the length of the typical event's run-time, $\tau(e)$.

Perfective

Predicate instantiation for the perfective operator is specified with the AT relation in (22), adapted from Condoravdi (2002), Deo (2009b), Lee & Tonhauser (2010).

(22) $$\text{AT}(P,i,w) = \begin{cases} \exists e[P(e)(w) \wedge \tau(e) \subseteq i] & \text{if } P \subseteq \mathscr{E}^{E} \\ \exists e[P(e)(w) \wedge \tau(e) \circ i] & \text{if } P \subseteq \mathscr{E}^{\mathscr{S}} \\ P(i)(w) & \text{if } P \subseteq \mathscr{I} \end{cases}$$

A predicate of dynamic events $P^{\mathscr{E}}$ stands in the AT relation with an interval i and a world w iff there is a P event in w whose temporal trace is contained in i. A predicate of states $P^{\mathscr{S}}$ stands in the AT relation with i and w iff there is a P event whose temporal trace overlaps i. A predicate of intervals $P^{\mathscr{I}}$ stands in the AT relation with i and w iff P holds throughout i.

I adopt a standard semantics for a perfective operator. This version is from Deo (2009a), but is essentially the same as in, for example, Iatridou et al. (2001) and Hacquard (2006). PERF2 applies to predicates of events or intervals, and returns a set of intervals such that there exists some interval i' contained in i, and P is instantiated AT i' in w.

(23) PERF: $\lambda P \lambda i \lambda w . \exists i' [\, i' \subseteq i \wedge \text{AT}(P, i', w)]$

5.3.2 The Non-past

In Chapter 2 §3 I suggested that Hungarian has a null Non-past tense. Sentences in which the Non-past occurs may be interpreted as having either present temporal reference or future temporal reference, as in (24a) and (24b), respectively.

(24) a. Context: What's János up to?

János olvassa a könyv-et.
János read.NPST.3SG the book-ACC
'*János is reading the book.*' Present

b. Context: What will János do/be doing tomorrow?

János olvassa a könyv-et holnap 3-kor.
János read.NPST.3SG the book-ACC tomorrow 3-TEMP
'*János will read/be reading the book tomorrow at 3.*' Future

This indicates that the lexical entry for the Non-past must allow for reference intervals that are located at any time beginning at the utterance interval and extending indefinitely in the future.

I take tense to be referential, as discussed in Chapter 2 §3 (Partee 1973; Kratzer 1998; Hacquard 2006). I use the following semantics, adapted from Kratzer (1998), for the Past and Non-past indexical tenses, where *now* is the time of utterance:

(25) $[\![past]\!]^{g,c}$ is defined iff c provides an interval $i \subseteq (-\infty, now)$. If defined, $[\![past]\!]^{g,c} = i$

(26) $[\![npst]\!]^{g,c}$ is defined iff c provides an interval $i \subseteq [now, +\infty)$. If defined, $[\![npst]\!]^{g,c} = i$

In the sample derivation in (27), IMPF applies to the predicate of eventualities (the uninflected sentence radical 'john-run') to form a predicate of intervals. The Non-past denotes the interval i, corresponding to the reference interval, determined in context. *npst* is defined iff i is contained in $[now, \infty)$.

(27) a. Context: A friend asks, 'What's János up to today?' I say:
János fut.
János run.NPST.3SG
'*János is running/will run.*'

b. $[\![\text{john-run}]\!] = \lambda e [\, \text{john-run}(e)]$

c. $\text{IMPF}(\lambda e [\, \text{john-run}(e)])$
$= \lambda P \lambda i \lambda w . \exists j [\, i \subseteq_{ini} j \wedge \forall k [\, k \in \mathscr{R}^c_j \rightarrow \text{COIN}(P, k, w)\,]](\lambda e [\, \text{john-run}(e)])$

$= \lambda i \lambda w . \exists j [\, i \subseteq_{ini} j \wedge \forall k [\, k \in \mathscr{R}^c_j \rightarrow \text{COIN}\,(\lambda e\,[\,\text{john-run}(e)]k, w)\,]]$
$= \lambda i \lambda w . \exists j [\, i \subseteq_{ini} j \wedge \forall k [\, k \in \mathscr{R}^c_j \rightarrow \forall w' \in \mathit{Hist}_{inr}(w) \rightarrow \exists e[\text{john-run}(e)(w') \wedge \tau(e) \circ k]]]$

d. $\text{IMPF}(\lambda e\,[\,\text{john-run}(e)])(\mathit{npst})$
$= \lambda w : i \subseteq [\mathit{now}, +\infty) . \exists j [\, i \subseteq_{ini} j \wedge \forall k [\, k \in \mathscr{R}^c_j \rightarrow \forall w' \in \mathit{Hist}_{inr}(w) \rightarrow \exists e[\text{john-run}(e)(w') \wedge \tau(e) \circ k]]]$

The output in (27d) says that i must be contained in the interval $[\mathit{now}, +\infty)$. There is some superinterval of i, j, and every cell k of a regular partition of j overlaps with at least part of an interval of János running.

(28) shows the result of the application of the Non-past to a perfectivized predicate.

(28) a. Context: A friend asks, 'What is Laci doing to help with the party?'

Laci meg-süt egy tortát.
Laci PART-bake.NPST.3SG a cake.ACC
'*Laci will bake a cake.*'

b. $\text{PERF}\,(\lambda e\,[\,\text{L-bake-a-cake}(e)])(\mathit{npst}) = \lambda w : i \subseteq [\mathit{now}, +\infty)\ .\ \exists i'\,[i' \subseteq$

$i \wedge \text{L-bake-cake}(e)(w) \wedge \tau(e) \subseteq i'])$

(28) denotes a proposition that holds of w iff there is some interval i' that is contained in i, which is itself contained in $[\mathit{now}, +\infty)$, and the run-time of the Laci-baking-a-cake event is contained in i'. This gives a non-past perfective reading.

5.3.3 Fog

Fog is an auxiliary verb that obligatorily gives rise to future temporal reference as in (29).

(29) a. Context: A friend wants to know what Mike plans to do after dinner today. I tell her:

Miki egy level-et **fog** ír-ni (ma este).
Miki a letter-ACC FOG.NPST.3SG write-INF (today evening)
'*Miki will write a letter (tonight).*'

b. Context: A friend asks what Mike did last night. I tell her:

#Miki egy level-et **fog** ír-ni (tegnap este).
Miki a letter-ACC FOG.NPST.3SG write-INF (yesterday evening)
Intended: *'#Miki will/was going to write a letter (last night).*'

c. Context: A friend calls, and asks, 'What is Mike doing right this minute?' I say:

#Miki éppen most **fog** ír-ni egy level-et.
Miki *éppen* now FOG.NPST.3SG write-INF a letter-ACC
Intended: *'#Miki will write a letter currently/right now.*'

Syntactically, *fog* patterns like other modal auxiliaries in Hungarian, as discussed in Chapter 2 §5. Cross-linguistically, the use of modal verbs for marking future reference is a well-attested strategy (e.g. Smith

1978; Yavaş 1982; Haegeman 1983; Enç 1996; Sarkar 1998; Dahl 2000; Palmer 2001; Kaufmann 2002; Condoravdi 2002; Jaszczolt 2005; Copley 2009; Tonhauser 2015).

Below, I argue that *fog* is neither an aspect marker not a tense, but rather a modal verb with a metaphysical modal base and either a bouletic or inertial ordering source. On this view, *fog*'s obligatory future reference can be explained through Condoravdi (2002)'s constraint on the use of modals, the Diversity Condition. §4.3 proposes a semantics for *fog*.

Against aspect

Grammatical/viewpoint aspect, which gives temporal perspective to an utterance, can be conveyed with an aspect marker specifying the temporal relations between a reference interval and the interval over which an event occurs (Smith 1997). *Fog* does not pattern like we might surmise an aspect marker to behave either syntactically or semantically.

No other auxiliary verbs in Hungarian are associated with aspect. As shown in Chapter 2, Hungarian auxiliary verbs are associated with modality. None are thought to mark temporal relations between reference intervals and event times.

Hungarian does not contain overt markers of grammatical/viewpoint aspect at all (see Chapter 2 §4 for details on covert imperfective and perfective aspect in Hungarian). Thus, if *fog* were an aspect marker, it would be the only one in the language.

Lastly, a plausible candidate for an aspect marker that conveys future reference is a prospective aspect marker. English 'be going to' and Paraguayan Guaraní *-ta* are examples of prospective aspect markers (Tonhauser 2011, 2015). Prospective aspect markers specify that the time of an event follows the reference interval associated with the sentence. For example, in (30a), the event of cake-eating is subsequent to the reference intervals, which are made salient by the contexts and parenthesized clauses. Because prospective aspect does not make reference to temporal relations between the utterance time and either the event time or the reference time, it is compatible with past temporal reference, as in (30b).

(30) a. Context: I tell my boyfriend that (at the present time) I can't resist eating our dessert early.

I **am going to** eat the whole cake (by the time you get home).

b. Context: I tell my boyfriend that I had (future) plans to eat our dessert early (at some RT), until I realized how sick I would feel.

I **was going to** eat the whole cake (but I changed my mind).

Fog's paradigm is defective, as mentioned above, in that it can never take Past tense marking, as in (31a). Nor can *fog* be used without Past marking but with past temporal reference, as shown in (31b) (in which past temporal reference is specified with the frame adverb *tegnap*, 'yesterday'). We might expect that *fog* would be compatible with past temporal reference if it were a prospective aspect marker.

(31) Context: A friend asks what János's plans for yesterday were before they were de-railed.

a. #János fog**-ott** úsz-ni.
János fog-PST.3SG swim-INF
Intended: '*János was going to swim.*'

b. #**Tegnap**, János fog úsz-ni.
yesterday, János fog-NPST.3SG swim-INF
Intended: '*Yesterday, János was going to swim.*'

Given that *fog* is consistently incompatible with past temporal reference, cannot be used to express counterfactual meaning (which is often associated with prospective aspect markers like 'be going to' in English), and cannot take past tense marking, *fog* cannot be a prospective aspect marker. No other aspect markers are likely candidates given *fog*'s obligatory future reference, so we can conclude that *fog* is not an aspect marker.

Against tense

Some literature on Hungarian refers to *fog* as a future tense (e.g. Lotz 1962; Csató 1994), but these analyses do not present evidence for this position. The implication is that because *fog* conveys future temporal reference, it must be a tense. More recent work on temporal reference suggests that tenses are far from the only productive way of marking temporal reference (see, e.g. Dahl 2001; Bittner 2005; Bohnemeyer 1998, and Tonhauser (2015), which argues that a cross-linguistically viable theory of temporal reference must acknowledge the full range of strategies for expressing these distinctions). That is, the fact that *fog* productively conveys future reference is not evidence that it is a tense.

We can understand tenses as a grammaticalized expression of location in time (Comrie 1985). A location in time can conveyed by the specification of a relationship between the reference time and the utterance time. Tenses are paradigmatic in the sense that for any given language, they make up a very small class of markers with this function. This distinguishes tenses from other elements in the sentence that can convey temporal reference, like temporal frame adverbs (e.g. 'at 3pm', 'tomorrow', 'next week'), which are unbounded in number and always optional. The implication, then, is that tenses are few, are more or less obligatory (relative to temporal frame expressions), and as part of a paradigm, they might be expected to fully cover the semantic space of temporal reference. If *fog* were a future tense, we might expect it to exhibit these properties, but it does not.

I suggest that *fog* is not a tense. The Non-past is sufficient to give rise to future reference in many circumstances, particularly in conjunction with future-referring temporal frame expressions, as in (32).

(32) I want to know if my friend will be at next week's family holiday event, so I ask:

Jössz az ünnepség-re?
come.NPST.2SG the feast-SUB
'*Are you coming to the feast?*'[7]

Thus, *fog* is optional for marking future reference in at least some kinds of utterances. We might expect a future tense to be obligatory in future-referring utterances, suggesting that *fog*.[8]

7 Example adapted from https://hunlang.wordpress.com/category/verbstensesmoods/

8 Portner points out that this assumption is frequently made, but without explicit argumentation, for English 'will':

> "Another point that is sometimes used (e.g., by Kaufmann 2005 b) to support the idea that will is not a future tense is the fact that the present tense can be used to talk about future situations, as in John leaves tomorrow, and is therefore classified as a non-past tense (e.g., Palmer 1986). If one makes the assumption that a tense system would not allow one form (the non-past) to express a superset of the meanings expressed by another (the putative future), one can conclude that will is not a future tense. I don't know of any explicit argument for the assumption, however." (Portner 2009: 238)

Because tenses are part of a paradigm, unlike temporal adverbs, they cannot be iterated. That is, a tense marker cannot apply to an already tensed expression:

(33) *Amy jumpeds/jumpsed/jumpss/jumpedd.

In general, auxiliaries in Hungarian do take tense marking, as illustrated in (34). (34a) has past temporal reference, and (34b) and (34c) have present temporal reference. This suggests that these expressions are not tenses themselves.

(34) a. Context: I explain why I didn't go out for drinks with my friends last night.

Tegnap reggel korán **kell-ett** kel-nem.
yesterday morning early KELL-PST get.up-INF.1SG
'*Yesterday morning I had to get up early.*'[9]

b. Context: I volunteer to help out at a soup kitchen.

Én meg **tud-om** főz-ni az ebéd-et.
I PART TUD-NPST.2SG cook-INF the lunch-ACC
'*I can make the lunch.*'

c. Context: My mom is visiting. After lunch, I ask her how she'd like to spend her visit.

Most mit **akar-sz** csinál-ni?
now what.ACC AKAR-NPST.2SG do-INF
'*What do you want to do now?*'[10]

Auxiliaries, including *fog*, take the inflectional person and number endings associated with tensed verbs, as in (34) and below in (35).

(35) Context: A friend tells me about his relationship problems. I ask how he is planning to handle the situation.

Mit **fog-sz** csinál-ni?
what.ACC FOG-NPST.2SG do-INF
'*What are you going to do?*'

Since *fog* is incompatible with past temporal reference and the Non-past marker is null, we never see *fog* surfacing with overt tense morphology. However, we can infer from the presence of person and number endings that sentences such as that in (i) involve the Non-past.[11] Because tenses cannot generally apply to tensed expressions, the fact that *fog* is inflected for the Non-past suggests that *fog* is not a tense itself.

Lastly, there is no evidence that any other Hungarian auxiliaries behave like tenses, and since *fog* is to

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There are a number of such similarities between 'will' and *fog*, and a potential avenue for future research is to extend the analysis herein to English 'will'.

9 Note that *kell* 'must' is one of a few auxiliary verbs that take tense but not person and number (Kenesei 2001; Körtvély 2009).

10 At least some authors take 'want' to be modal (e.g. Condoravdi & Lauer 2009).

11 The idea that *fog* inflects for tense is corroborated in the literature, e.g. in Csató (1994). See Chapter 2 §3 for details.

all appearances an excellent example of a Hungarian auxiliary verb, it would be exceptional for *fog* to be acting as a tense in the language. So, although *fog* conveys future reference, it does not behave like a future tense.

The modal base

As discussed in Chapter 2 §5 and §6, auxiliaries cross-linguistically tend to convey meanings associated with modality (Heine 1993; Kenesei 2001), including in Hungarian (Kenesei 2001; Körtvély 2009).

Recall from §6 of Chapter 2 that modality comes in a variety of flavours, which are captured by the modal's force, modal base, and ordering source. In Chapter 2 §6, we saw that some Hungarian auxiliaries can express multiple modal flavours. The fact that other auxiliaries in Hungarian express modality suggests that *fog* may express modality as well, but *fog* is unique in having a restriction on its temporal reference. Other modals in Hungarian are compatible with past, present, and future temporal reference, as in (36a), (36b), and (36c) respectively.

(36) a. Context: A friend asks why I couldn't come over to play. I tell her:

Kell-ett csinalnom a házi feladat-om-at.
must.PST.3SG do.INF.1SG the home.ADJ assignment-POSS.1SG-ACC
'*I had to do my homework.*' Past

b. Context: A friend asks where Mari is. I know what her plans were, so I look at my watch and say:

Mari **kell** lenni a buli-ban most
mary must.NPST.3SG be.INF the party-INE now
'*Mari must be at the party now.*' Present

c. Context: I decline an invitation to go out for drinks, explaining:

Holnap reggel korán **kell** kelnem.
tomorrow morning early must.NPST get.up.INF.1SG
'*I have to get up early tomorrow morning.*' Future

I propose that *fog*'s obligatory future reference falls out from temporal properties of modals in general if we analyze *fog* as a modal verb that can only take a metaphysical (totally realistic circumstantial) modal base.[12] This analysis is plausible in part because *fog* is not the only modal in Hungarian that can only take

12 Some work on future reference (e.g. Kaufmann 2002) proposes that possible worlds are critical for analyzing future-referring expressions because the truth of future claims cannot be evaluated at the speech time. Kissine (2008), for example, points out that this is the perspective of a majority of work on 'will', including Palmer (2001); Smith (1978); Enç (1996); Yavaş (1982); Jaszczolt (2005); Haegeman (1983); Sarkar (1998); Condoravdi (2002); Copley (2009). Arguments against this position exist, however, including Kissine (2008) itself, but Kissine is forced to posit a covert modal operator which scopes over 'will' in order to capture the fact that future reference requires a modal component, even if 'will' itself does not. Similarly, Del Prete (2013) posits that 'will' is a true future tense without a modal component, and modality arises in future-referring utterances containing 'will' because it is necessarily a consequence of the branching structure of future time (Kaufmann 2002; Condoravdi 2002). The position that constructions which give rise to future temporal reference necessarily involve modality includes futurates (future-referring expressions with no overt future marking), as in Copley (2009), in which she says, 'it is quite impossible to do without modality in the meaning of futurates'. Dowty (1979) and Cipria & Roberts (2001) offer two other accounts of 'futurates' which depend on modality. On this view, if *fog* conveys future temporal reference, it must be modal.

one type of modal base.*Tud* 'know/can', for example, cannot take an epistemic modal base. Instead, it can give rise only to deontic and dynamic/dispositional/ability readings, all of which are associated with a circumstantial modal base (at least for some authors, e.g. von Fintel 2006, Hacquard 2009). Like *tud*, *fog* cannot take an epistemic modal base in any context, as shown in (37).

(37) a. Context: In science class, a friend is not sure how to combine two liquids that won't mix, and I tell her:

#Az olaj **fog** úsz-ni a víz-en.
the oil FOG.NPST.3SG float-INF the water-SUP
Intended: '*Oil will float on water.*'

b. Context: I am exasperated with a girlfriend's predictability. I complain to a friend that I even know what she is wearing based on her mood and the weather.

#Tél-en Mari mindig **fog** visel-ni zöld kabát-ot.
winter-SUP Mari always FOG.NPST.3SG wear-INF green coat-ACC
Intended: '*In winter, Mari will always wear a green coat.*'

In what follows, I propose that *fog* can only take a single modal base: a metaphysical modal base.

I use Thomason (1984)'s '$T \times W$ frames' world-time model (via Condoravdi 2002: 24 Condoravdi 2003: 14 and Kaufmann 2002: 13). Time is defined as the set of moments T that are linearly ordered with an 'earlier-than' relation $<$. Worlds in the set W are represented as trajectories (histories) through time, so that a state of affairs holds in a world w at any given time t. There is a 3-place relation ($\simeq$) on $T \times W \times W$ called the historical equivalence relation.[13]

(38) **Historical equivalence relation**:
The historical equivalence relation holds between two worlds w and w' at a time t iff the histories of w and w' are identical up to t, represented as $w \simeq_t w'$. The historical equivalence relation is a monotonic condition: an order-preserving function between ordered sets.

Worlds in the historical equivalence relation are known as historical alternatives. Historical alternatives are indistinguishable up to and including t, and may differ after.

The common ground (CG) of a conversation at a time t is a set of propositions that interlocutors assume to be common knowledge shared between them at t. The context set (CS) is a set of worlds compatible with the propositions in the CG at t (Stalnaker 1978, 2002; Von Fintel 2008). Settledness, adapted from Condoravdi (2002: 82) and Kaufmann (2002: 5), is defined in (39).

(39) P is settled for any world w' in the context set CS at t iff for all w'' such that $w' \approx_t w''$, $P(w',t)$ and $P(w'',t)$.

P is settled in any world w' in the context set at t_0 whenever it is true in w' at t and is also true in all historical alternatives of w' at t. Note that this means that the past is always settled, because anything up to and including t is by definition instantiated in every historical alternative of w' at t. Future-referring sentences, on the other hand, are only settled if their truth is already inevitable at t.

The metaphysical modal base consists of the historical alternatives of w at t (Condoravdi 2002: 82).

13 For all t, $\simeq_t$ is an equivalence relation (so it is reflexive, transitive, and symmetric). For any $w, w' \in W$ and $t, t' \in T$, if $w \simeq_t w'$ and $t' < t$, then $w \simeq_{t'} w'$ (Condoravdi 2002; Kaufmann 2002).

(40) **Metaphysical modal base**: $MB(w,t) = \{w' | , w \approx_t w'\}$

(40) lets us capture modal readings that have to do with how the future might turn out: the set of historical alternatives of w contains all the worlds that are the same as w up until t, but differ after t.

Condoravdi (2002) proposes the Diversity Condition: a felicity condition on the use of modals.[14] One effect of the Diversity Condition is that a modal with a metaphysical modal base is not only compatible with future reference, but ensures it. By positing that *fog* can only take a metaphysical modal base, this gets us the fact that *fog* is obligatorily future-referring. If *fog* could take other modal bases (e.g. epistemic), we would expect it to be compatible with other temporal references, and it is not.

I give a version of the Diversity Condition (adapted from both Condoravdi 2002: 83 and Thomas 2014: 435 for readability) in (41).

(41) **Diversity Condition**:
A context c with context set CS can assign a modal base MB to a modal operator with a temporal perspective t and a prejacent P only if there is a world w in CS and there are $w', w'' \in \text{MB}(w,t)$ such that $P(w',t) = 1$ and $P(w'',t) = 0$.

The Diversity Condition requires that the common ground in w at t is compatible with there being both P and not P worlds in the modal base of w at t. A modal with a metaphysical modal base can only meet this requirement if P is not settled at in the CS of the context in which it is uttered, at the time of its utterance.

How does this ensure future reference with a metaphysical modal base? Recall from the definition of settledness in (39) that any P instantiated before the utterance time is settled. That is, any common ground at all is one in which a P instantiated before t_0 is settled. The only circumstances in which the requirement for settledness is not satisfied when a modal base is metaphysical is if the time at which P is instantiated is after t_0. As a result, only when the temporal orientation is after the time of utterance can a metaphysical modal base satisfy the Diversity Condition.

An issue has come up in the literature regarding the intended scope of the Diversity Condition. Though Condoravdi only discusses possibility modals, she takes the generalization captured by the Diversity Condition to apply to all modals.[15] However, some authors believe that Condoravdi intends the Diversity Condition to apply only to possibility modals, and/or that it does not work for necessity modals (e.g. Werner 2006; Laca 2012; Klecha 2013). If true, this would be a problem for the analysis suggested here since *fog* is intended to have universal force. It has been suggested that the Diversity Condition interferes with the universal quantification of necessity modals, but this is not correct. When a speaker makes a claim using a necessity modal, they are *asserting* that P is settled (i.e. that there are no $\neg P$ worlds in the modal base). What the Diversity Condition requires is that it is not *presupposed* that P is settled at t_0.[16] In other words, the Diversity Condition ensures that there are live options in the common ground at speech time for whether or not P obtains. This is not in conflict with modal assertions with universal force, and in fact, it is what allows them to be felicitously uttered: it would be infelicitous to utter a universal modal if it were presupposed that P was settled. So for metaphysical modals, the Diversity Condition formalizes the well-known idea that it is infelicitous (or at least marginal) to assert something that is already presupposed to be settled.[17]

14 Condoravdi's focus is on polysemous modals, for which she takes the modal base to be assigned by the context of utterance. Crucially, the Diversity Condition is intended to apply to all modals.

15 This is suggested in Condoravdi (2002: 78), and the point has been confirmed through p.c. between Condoravdi and Deo.

16 The Diversity Condition is a requirement on the context set CS. That is, it is a condition on what is in the common ground at the speech time, rather than what is asserted.

17 Note that it is not always the case that it is infelicitous to assert something that is in the common ground, as discussed in Horn

Ordering sources

The different flavors associated with *fog* come from the ordering sources that it can take.

With a bouletic ordering source, worlds in the modal base are ordered with respect to the commitments or desires of an animate entity. This yields 'intention' type readings (Dahl 1985), as in (42).

(42) a. Context: I'm making plans to hang out with a friend. I propose the following.

I'll meet you in the park at 3.

b. Context: Alysia's boyfriend wants to teach her to ride a bicycle, but she doesn't have one. He offers to get her one.

Neked biciklit **fog-ok** venni.
DAT.2SG bicycle-ACC fog-1SG buy.INF
'*I will buy you a bicycle.*'

c. Context: My friend lent me a book that looks boring. They notice I haven't started it, so feeling bad, I promise:

Holnap **fog-om** olvas-ni a könyv-et.
tomorrow FOG-NPST.1SG read-INF the book-ACC
'*Tomorrow I will read the book.*'

The bouletic ordering source is a set of propositions (B) that describe an agent's desires and commitments (Kratzer 1981), (Hacquard 2006: 36). This set of propositions imposes the following ordering on a set of worlds.

(43) Ordering $\leq_B$:
For all worlds $w, w' \in W : w \leq_B w'$ iff $\{p : p \in B \wedge w' \in B\} \subseteq \{p : p \in B \wedge w \in B\}$

The ordering source $\leq_B$ induces an ordering in which a world w is better than another world w' if the propositions that hold in w are a superset of those that hold in w'.

Inertial ordering sources are based on the continuation of existing situations or states of affairs. A set of worlds in the modal base is ordered by how well each world adheres to a natural continuation of current states. A modal with an inertial ordering source yields a 'prediction' type reading, as in (44).

(44) a. Context: I tell a friend that I'm excited because my favourite play is being performed locally.

The play Waiting for Godot will open on January 27th.

b. Context: I tell a friend we should change our weekend plans because of the forecast.

Holnap es-ni **fog** az eső.
tomorrow fall-INF FOG.NPST.3SG the rain
'*It will rain tomorrow.*'

(1991).

c. Context: I express to a friend my hopes for winning a contest.

Meg **fog-om** nyer-ni a versenyt!!
PART FOG-NPST.1SG win-INF the prize.ACC
'I'm going to win the prize!!'

The inertial ordering source is a set of propositions (I) that describe states of affairs that are compatible with the normal course of events up until the speech time. This set of propositions imposes the following ordering on a set of worlds.

(45) Ordering $\leq_I$:
For all worlds $w, w' \in W : w \leq_I w'$ iff $\{p : p \in I \wedge w' \in I\} \subseteq \{p : p \in I \wedge w \in I\}$

A lexical entry for *fog*

Modal verbs can take predicates of eventualities or predicates of intervals as arguments, and return predicates of intervals.[18] Modals are defined with respect to a modal base M and an ordering source O (Kratzer 1981). I propose the lexical entry for *fog* given in (46), where $Best(M_M)(O)(w)(now)$ is the set of worlds in the metaphysical modal base in w at the speech time that are best ranked with respect to the ordering induced by O in w at t (this notation is borrowed from Thomas 2014).

(46) $[\![fog]\!] = \lambda P \lambda i \lambda w. \forall w' [w' \in Best(M_M)(O)(w)(now) \rightarrow \text{AT}(P, i, w')]$

(46) says that $fog(P)(i)$ holds of a world w iff $P(i)$ holds in the best worlds w' in the metaphysical modal base according to the ordering source. The modal base is metaphysical, and the ordering source can be bouletic or inertial. *Fog* can apply to an imperfectivized or perfectivized predicate. The distribution of the Non-past versus *fog* to express future reference is determined in part by the range of readings that the aspectual operators allow for with each construction. A derivation with a perfectivized predicate is shown in (47).

(47) a. Context: A friend asks, 'What is Laci doing to help with the party?'
Laci meg **fog** süt-ni egy tortát.
Laci PART FOG.NPST.3SG bake.INF a cake.ACC
'*Laci will bake a cake.*'

b. $[\![\text{l-bake-a-cake}]\!] = \lambda e\,[\text{l-bake-a-cake}(e)]$

c. $\text{PERF}(\lambda e\,[\text{l-bake-a-cake}(e)])$
$= \lambda P \lambda i \lambda w. \exists i' [i' \subseteq i \wedge \text{AT}(P, i', w)]\,(\lambda e\,[\,\text{l-bake-a-cake}(e)])$
$= \lambda i \lambda w. \exists i' [i' \subseteq i \wedge \text{AT}(\lambda e[\text{l-bake-a-cake}(e)], i', w)]$
$= \lambda i \lambda w. \exists i' [i' \subseteq i \wedge \exists e[\text{l-bake-a-cake}(e)(w) \wedge \tau(e) \subseteq i']]$

d. $fog(\text{PERF}(\lambda e\,[\text{l-bake-a-cake}(e)]))$
$= \lambda P \lambda i \lambda w. \forall w' [w' \in Best(M_M)(O)(w)(now) \rightarrow \text{AT}(P, i, w')]$

18 I am assuming that *fog* applies to the output of aspectual operators (a function from world-time pairs to truth values). I have not seen any analysis which specifies the semantic interaction between modal auxiliaries and aspectual operators for Hungarian. My stance does not seem be problematic for any of the analyses I've seen that propose a syntactic structure explicitly locating both aspect and modal auxiliaries in Hungarian: Kenesei (2001) argues that 'central auxiliaries' including *fog* should be treated as regular verbs with their own TP and VP; Cowper & Hall (2008) treats *fog* and other modals as appearing in Infl; Alberti (2004) takes modal auxiliaries to move from V to the specifier of AspP in order to get aspect; Alberti (2004) and Olsvay (2004) take auxiliaries to be 'aspectually deficient'. There is precedent for the notion of aspectual operators applying below modal verbs, as in Hacquard (2009).

$(\lambda i \lambda w.\exists i'[i' \subseteq i \wedge \exists e[\text{l-bake-a-cake}(e)(w) \wedge \tau(e) \subseteq i']])$
$= \lambda i \lambda w.\forall w'[w' \in Best(M_M)(O)(w)(now) \rightarrow \text{AT}((\lambda i \lambda w.\exists i'[i' \subseteq i$
$\wedge \exists e[\text{l-bake-a-cake}(e)(w) \wedge \tau(e) \subseteq i']]), i, w')]$
$= \lambda i \lambda w.\forall w'[w' \in Best(M_M)(O)(w)(now) \rightarrow \exists i'[i' \subseteq i \wedge \exists e[\text{l-bake-a-cake}(e)$
$(w') \wedge \tau(e) \subseteq i']]]$

Fog returns a function from intervals to propositions. The Non-past provides the interval i (see (26) for the definition of the Non-past), as shown in (48).[19]

(48) $fog(\text{PERF}(\lambda e\,[\text{l-bake-a-cake}(e)]))(npst)$
$= \lambda w : i \subseteq [now, +\infty).\forall w'[w' \in Best(M_M)(O)(w)(now) \rightarrow \exists i'[i' \subseteq i \wedge \exists e[\text{l-bake-a-cake}(e)(w') \wedge$
$\tau(e) \subseteq i']]]$

The Non-past's contribution to predicates modified by *fog* does not affect the meaning of the sentence for the following reason. Due to its modal base, *fog* is felicitous only when $i > now$, and the Non-past is defined only when $i \subseteq [now, \infty)$. The set of intervals picked out by *fog* is therefore a subset of the set of intervals picked out by *npst*: all the intervals after now are also intervals contained in the interval beginning now and extending infinitely into the future. This allows for perfective readings, in which a future event is viewed as an atomic whole.

(49) shows a derivation containing an imperfectivized *fog* predicate.

(49) a. Context: A friend asks, 'What's János up to today?' I say:
János fut-ni **fog**.
János run-INF FOG.NPST.3SG
'*János will run.*'

b. $[\![\text{john-run}]\!] = \lambda e\,[\,\text{john-run}(e)]$

c. $\text{IMPF}(\lambda e\,[\,\text{john-run}(e)])$
$= \lambda P \lambda i \lambda w.\,\exists j[\,i \subseteq_{ini} j \wedge \forall k[\,k \in \mathscr{R}^c_j \rightarrow \text{COIN}(P, k, w)\,]](\lambda e\,[\,\text{john-run}(e)])$
$= \lambda i \lambda w.\,\exists j[\,i \subseteq_{ini} j \wedge \forall k[\,k \in \mathscr{R}^c_j \rightarrow \text{COIN}(\lambda e\,[\,\text{john-run}(e)]k, w)\,]]$
$= \lambda i \lambda w.\,\exists j[\,i \subseteq_{ini} j \wedge \forall k[\,k \in \mathscr{R}^c_j \rightarrow \forall w' \in Hist_{inr}(w) \rightarrow \exists e[\text{john-run}(e)(w') \wedge \tau(e) \circ k]]]$

d. $fog(\text{IMPF}(\lambda e\,[\,\text{john-run}(e)]))$
$= \lambda P \lambda i \lambda w.\forall w'[w' \in Best(M_M)(O)(w)(now) \rightarrow \text{AT}(P, i, w')](\lambda i \lambda w.\,\exists$
$j[\,i \subseteq_{ini} j \wedge \forall k[\,k \in \mathscr{R}^c_j \rightarrow \forall w' \in Hist_{inr}(w) \rightarrow \exists e[\text{john-run}(e)(w') \wedge \tau(e) \circ k]]])$
$= \lambda i \lambda w.\forall w'[w' \in Best(M_M)(O)(w)(now) \rightarrow \text{AT}((\lambda i \lambda w.\exists j[i \subseteq_{ini} j \wedge \forall k[k \in \mathscr{R}^c_j$
$\rightarrow \forall w' \in Hist_{inr}(w) \rightarrow \exists e[\text{john-run}(e)(w') \wedge \tau(e) \circ k]]]), i, w')]$
$= \lambda i \lambda w.\forall w'[w' \in Best(M_M)(O)(w)(now) \rightarrow \exists j[\,i \subseteq_{ini} j \wedge \forall k[\,k \in \mathscr{R}^c_j$
$\rightarrow \forall w'' \in Hist_{inr}(w') \rightarrow \exists e[\text{john-run}(e)(w'') \wedge \tau(e) \circ k]]]]$

e. $fog(\text{IMPF}(\lambda e\,[\,\text{john-run}(e)]))(npst)$
$= \lambda w : i \subseteq [now, +\infty).\,\forall w'[w' \in Best(M_M)(O)(w)(now) \rightarrow \exists j[\,i \subseteq_{ini} j \wedge \forall k[\,k \in \mathscr{R}^c_j \rightarrow \forall w'' \in$
$Hist_{inr}(w') \rightarrow \exists e[\text{john-run}(e)(w'') \wedge \tau(e) \circ k]]]]$

$fog(\text{IMPF}(P))$ applies to an interval i and returns a proposition that holds of a world w whenever the best worlds w' in the metaphysical modal base of w relative to the ordering source (O) contain an interval j such that i is an inertial subinterval of j and every partition cell in a regular partition of j overlaps with a P

19 If the Past applied to a *fog* predicate, the derivation would crash because there are no intervals before *now* that allow for the Diversity Condition to be satisfied with a metaphysical modal.

eventuality, in this case, an event of János running. This allows for the sentence to describe habits, generic claims, and in-progress events that obtain in the future.

The following sections are organized by Vendlerian predicate type (Vendler 1957). The table below lists the four predicate types and their relevant properties, to be defined as they arise in the following sections.

	Telic	Durative	dynamic
Accomplishment	✓	✓	✓
Achievement	✓		✓
Activity		✓	✓
Stative		✓	

Table 5.1 Properties of Vendlerian predicate types

5.4 Future reference in stative sentences

5.4.1 Introduction

In English, neither the Simple Present nor the Progressive Present are felicitous for conveying future temporal reference with stative predicates, as in (50).

(50) a. Context: A friend says, 'I didn't think anyone in your family spoke French.' I say that's true, but:

#John **knows** French next year after taking a class.

b. Context: I am trying to convince a friend that climate change is a serious concern. I say:

#Two hundred years from now, in the future, some streets in downtown New Haven **lay** several inches underwater!

c. Context: I plan to let my infant daughter believe in myths like Santa:

#Janie **is believing** in Santa Claus once she is a little older.

d. Context: I show some party supplies to a friend:

#This decorative box **is containing** a cake at next week's party.

This contrasts with 'will' and 'be going to', which are both felicitous for future reference in statives:

(51) a. Context: A friend says, 'I didn't think anyone in your family spoke French.' I say that's true, but:

John **will know** French next year after taking a class.

b. Context: I am trying to convince a friend that climate change is a serious concern. I say:

Within two hundred years, some streets in downtown New Haven **will lay** several inches underwater!

c. Context: I plan to let my infant daughter believe in myths like Santa:

Janie **is going to believe** in Santa Claus once she is a little older.

d. Context: I show some party supplies to a friend:

This decorative box **is going to contain** a cake at next week's party.

In Hungarian as in English, the Non-past alone cannot be used to convey future temporal reference in stative sentences. That is, *fog* is required for future reference with statives, as in (52).

(52) Context: I worry that my in-progress painting is ugly. A friend says:

a. #A kép nagyon jól néz ki, amikor befejez-ed!
the picture very well watch.NPST.3SG PART, when finish-NPST.2SG
Intended: '*The painting will look great when it's done!*'

b. A kép nagyon jól **fog** ki-néz-ni, amikor befejez-ed!
the picture very well FOG.NPST.3SG PART-watch-INF, when finish-NPST.2SG
'*The painting will look great when it's done!*'

This pattern holds even in the presence of future-oriented temporal frame expressions, as in (53).[20]

(53) Context: A friend says, 'I didn't think anyone in your family spoke French.' I tell her that János is taking French classes, so...

a. #Jövő év-ben, János tud franciául.
next year-INE, J'anos know.NPST.3SG French
Intended:'*János knows French next year.*'

b. Jövő év-ben, János **fog** tud-ni franciául.
Next year-INE, János FOG.NPST.3SG know-INF French
'*János will know French next year.*'

I suggest that a promising strategy for understanding the distribution of the Non-past and *fog* for expressing future temporal reference is to examine the pragmatic reasoning involved in how speakers make a choice

20 One notable exception is that with the temporal adverb *majd*, which means 'in the future', Non-past stative sentences improve, as in (i).

(i) Context: A friend asks, 'What are Jancsi's plans after we graduate?' I say:

Jancsi Párizs-ban lak-ik majd.
John Paris-INE live.NPST.3SG in.the.future
'John will live in Paris.' State

See §4.4 for details.

between the two constructions.

5.4.2 A Gricean quantity-based approach

In order to explore the distribution of Non-past versus *fog* sentences containing stative predicates, we need to make explicit the difference between the temporal properties of a Non-past sentence containing a stative predicate and a *fog* sentence containing a stative predicate. As examples, take the sentences and their respective logical forms in (54).

(54) Context: A friend says, 'I didn't think anyone in your family spoke French.' I tell her that János is taking French classes, so...

a. János tud franciául.
János know.NPST.3SG French
'*János knows French.*'

$\text{IMPF}(\lambda e[\text{j-tud-franciaul}(e)])(npst)$

$= \lambda w : i \subseteq [now, +\infty)\,.\,\exists j[\,i \subseteq_{ini} j \wedge \text{j-tud-franciaul}(j)(w)]$

b. János **fog** tud-ni franciául.
János FOG.NPST.3SG know-INF French
'*János will know French.*'

$fog(\text{IMPF}(\lambda e[\text{j-tud-franciaul}(e)]))(npst)$

$= \lambda w : i \subseteq [now, +\infty)\,.\,\forall w'[w' \in Best(M_M)(O)(w)(now) \rightarrow \exists j[\,i \subseteq_{ini}$

$j \wedge \text{j-tud-franciaul}(j)(w')]]$

The difference in the temporal properties of (54a) and (16d) boils down to the following: the Non-past construction is compatible with an interpretation in which j includes the speech time, whereas the *fog* construction is not compatible with such an interpretation. This is so because *fog*'s metaphysical modal base consists of worlds that only diverge from w after the speech time. The metaphysical modal base restricts the temporal reference of *fog* sentences due to the Diversity Condition, which requires (for metaphysical modals) that P not be settled at reference time.

Thus the Non-past and *fog* have almost identical temporal properties. The only difference is that the Non-past allows for intervals that include the speech time, and *fog* does not. Recall that stative predicates hold directly of an interval: COIN(P,i,w) = P(i)(w). It turns out that $fog(P \subseteq \mathscr{E}^S)(i)$ asymmetrically entails $npst(P \subseteq \mathscr{E}^S)(i)$, because the set of worlds in which P holds of i in w and i is after now is a subset of the set of worlds in which P holds of i in w and i is contained in the interval beginning at speech time and extending indefinitely into the future.[21]

(55) $\{w \mid P(i)(w) \wedge i > now\} \subseteq \{w \mid P(i)(w) \wedge i \subseteq [now, +\infty)\}$

With respect to its impact on temporal reference, *fog* can therefore be thought of as being more specific, and hence more informative, than the Non-past.

21 I write $fog(P \subseteq \mathscr{E}^S)(i)$ and $npst(P \subseteq \mathscr{E}^S)(i)$ as a shorthand. For both $npst(P \subseteq \mathscr{E}^S)(i)$ and $fog(P \subseteq \mathscr{E}^S)(i)$, I intend for IMPF to have applied, and for i to be restricted by the presupposition associated with the Non-past.

Given that these two constructions are both semantically compatible with expressing future reference, speakers must choose which device to use in a given context. Because one asymmetrically entails the other, we can construe these devices as forming a privative dyad ⟨*fog*,*npst*⟩, with *fog* being the stronger alternative.[22] When faced with a choice between devices in a privative dyad, speakers prefer to utter the stronger alternative if they are in a position to do so, in order to fulfill the first maxim of Quantity (Grice 1970, 1989; Horn 2006).[23] This makes the correct prediction: when speakers want to assert that *P* holds in the future, they choose *fog* over the Non-past.

When the weaker member of a privative dyad is used, an implicature can arise that the speaker is not in a position to utter the stronger alternative. In this case, when the Non-past is used in a sentence containing a stative predicate, it implicates that the speaker is not in a position to assert that *P* holds at some interval following the speech interval. Thus, the Non-past is not used to express future reference in stative sentences.

However, if speakers are choosing which construction to use based on which option best fulfills the maxim of Quantity, then the Non-past (as the weaker alternative) is predicted not to be used for future reference in eventive sentences either. This is not borne out by the data: the Non-past is routinely used for future reference in eventive sentences, as in (56).

(56) a. Context: I'm coordinating a dinner party. I inform a friend that if he arrives a little early...

Laci (éppen) **süt** **meg** egy tortát.
Laci (ÉPPEN) bake.NPST.3SG PART a cake.ACC
'*Laci will be (finishing) baking a cake.*' Accomplishment

b. Context: I express to a friend why I think János will be very happy over the weekend.

Pénteken, János kap-ja az ajándék-ot!
Friday János receive-3SG.NPST the present-ACC
'*János is getting a present (this weekend)!*' Achievement

c. Context: I ask what our friends will be doing for the talent show. Mari tells me:

János **fog** zongoráz-ni.
János FOG.NPST.3SG play.piano-INF
'*János will play the piano.*' Activity

In order to explain uses of the Non-past for future reference in dynamic predicates, then, we must assume that speakers are choosing which construction to use based on something other than the maxim of Quantity. One possibility is that speakers are prioritizing Manner over Quantity: the Non-past is a null tense, whereas *fog* is periphrastic. As such, the Non-past is simpler and more brief, making it the winning construction if Manner is prioritized over Quantity. This approach is advantageous for understanding the distribution of the Non-past and *fog* between different dynamic eventive predicate types: the Non-past is more frequently

22 Privative dyads, for Horn & Abbott (2012), consist of exactly two elements, such that the stronger element is marked for a feature for which the weaker is unmarked or unspecified. Note that privative dyads are all Horn scales, but not all Horn scales are privative dyads. Because *fog* and the Non-past are the only available strategies to give rise to future reference, they form a dyad. Because *fog* and the Non-past are in an entailment relation, they are privative (this clarification is thanks to p.c. with Larry Horn).

23 More precisely, speakers are predicted to choose the stronger alternative in a privative dyad if the stronger element is also a viable candidate in other respects, e.g. in terms of the maxim of Manner and any other factors that might affect the choice between alternatives. See below (and Chapter 6) for more on how the maxim of Manner may impact the distribution of *fog* versus the Non-past in future-referring utterances.

used for future reference when fewer possible readings are available, and *fog* is preferred when a wider range of readings is possible, suggesting that when clarity is not in question, the simpler construction is preferred. A drawback to this approach is that it leaves open the question of why speakers appear to have a choice between whether to prioritize Quantity or Manner, but with stative sentences, Quantity is always the determining factor. This is a serious concern, because the unavailability of the Non-past for expressing future reference with statives is robust. Non-past future-referring stative sentences are not just marginal or questionable: speakers agree that they are outright unacceptable. Further, this is the case not only for Hungarian, but for English as well.

An additional concern is that if *fog* and the Non-past are indeed in a privative dyad, then their relationship is a pragmatic one, based on conversational implicature. As with any conversational implicature, there should be instances in which the implicature is felicitously cancelled. There is at least one case in which the Non-past is felicitously used to express stative reference in statives: when it occurs with the temporal adverb *majd* 'in the future'. See §4.4 for examples.

5.4.3 A manner approach

What if the determining pragmatic factor in the distribution of the Non-past and *fog* for expressing future temporal reference is not the maxim of Quantity, but the maxim of Manner? This alternative approach relies on the fact that statives can give rise to the superinterval implicature, given in (57).[24]

(57) **Superinterval implicature:** If a stative predicate P is asserted to hold at some interval j, then a conversational implicature arises that there is some j' such that j is contained in j' and P holds of j'.

The superinterval implicature captures the intuition (noted by Dowty 1986, Kamp & Reyle 1993, and Lascarides & Asher 1993, among others) that stative predicates are by default expected to hold beyond the reference interval. So, for any non-dynamic stative predicate P, an inference arises that P holds of some j' that contains j. For example, the context in (58) provides a reference interval extending from the speech time to the Friday due date, but in all likelihood the speaker does not intend to imply that John knows French *only* for that length of time.

(58) Context: I need help on my French project, which is due this Friday. I ask a friend if she knows anyone who speaks French. She says:

John knows French.

Rather, what is conveyed is that John knows French over an indefinitely long superinterval of the reference interval. World knowledge and contextual information can help interlocutors specify the nature of the interval in question. Likewise, the length of the superinterval can remain vague, or can be determined by context and general knowledge about the typical duration of the state being described.

As we saw in the previous approach, the only difference between the temporal properties of the Non-past and *fog* is that the Non-past allows for intervals that include the speech time, and *fog* does not. However, if the superinterval implicature goes through, then a sentence containing *fog* might be inferred to convey that P holds of a superinterval of an interval $i > now$, potentially one that contains the speech time. This would render the Non-past and *fog* constructions informatively equivalent. In such a case, the Non-past, being the simpler alternative, may be preferred. Let's go through this reasoning in more detail using the following

24 Adapted from Gennari (2003). See Chapter 3 §4 for details.

example.

(59) Context: My family is moving to France next year. A friend says, 'I didn't think anyone in your family spoke French.' János is taking French classes, so I say:

János **fog** tud-ni franciául.
János FOG.NPST.3SG know-INF French
'*János will know French.*'

$fog(\text{IMPF}(\text{j-tud-franciaul}))(npst)$

$= \lambda w : i \subseteq [now, +\infty) \,.\, \forall w' [w' \in Best(M_M)(O)(w)(now) \rightarrow \exists j [\, i \subseteq_{ini}$

$j \wedge \text{j-tud-franciaul}(j)(w')]]$

We can go through the pragmatic reasoning associated with the utterance of the sentence in (59) in the given context as a series of steps, á la Searle's approach to speech acts (Searle 1975).

(60) a. STEP 1: The speaker's response to the context is an assertion containing *fog* and a stative predicate. By using *fog*, the speaker is asserting that P holds after the speech time (s.t.). The presence of a stative predicate triggers the superinterval implicature.

b. STEP 2: Because the implicature was triggered, the hearer infers that the utterance of (59) is compatible with j overlapping with s.t., which means that P can hold of s.t.

c. STEP 3: The hearer assumes that the speaker is rational and cooperating in the conversation, so her response is expected to satisfy the maxims of Quantity and Manner.

d. STEP 4: With the enrichment triggered by the superinterval implicature, $npst(P \subseteq \mathscr{E}^S)(i)$ and $fog(P \subseteq \mathscr{E}^S)(i)$ are informationally equivalent. They denote the same set of worlds: $\{w \mid P(i)(w) \wedge i \subseteq [now, +\infty)\}$.

e. STEP 5: If two constructions are informatively equivalent, there is a preference for the simpler and more brief of the two (the Non-past) in order to best fulfill the maxim of Manner.

f. STEP 6: But the speaker did not use the Non-past. Use of the more complex form (*fog*) gives rise to a Manner-based implicature that the speaker has a reason for not using the simpler alternative. Upon accepting this inference, the hearer must identify the reason the speaker chose the more complex form.

g. STEP 7: Because the equivalence between the two constructions was only in view of the superinterval implicature, the hearer infers that the speaker does not intend for the superinterval implicature to go through.

h. STEP 8: If the superinterval implicature does not apply, the utterance conveys only that P holds of some $i > now$.

i. STEP 9: Further, the hearer can infer that by uttering *fog*, the speaker intends to convey the strengthened proposition that P holds of some future interval, and P does not hold of the

speech time.

This analysis gives us the correct results. Because the presence of a stative predicate triggers the superinterval implicature, speakers must use *fog* if they want to convey that a stative predicate holds in the future but not necessarily of the utterance time. This accounts for why the Non-past is unavailable for future reference with statives. Further, this analysis does not have the drawback of the previous proposal. Because the superinterval implicature only arises with stative predicates, this accounts applies only to stative predicates, and predicts that dynamic predicates behave differently. A drawback to this approach, however, is that it requires that an implicature be triggered and then inferred to not apply in every instance that a speaker utters a sentence containing *fog* and a stative predicate. An analysis that does not hinge upon such a substantial amount of mental computations on the part of the hearer may be preferable. A potential rescue for this issue may be Morgan's notion of 'short-circuited implicatures', in which an implicature is calculable, but not necessarily actually calculated in every instance (Morgan 1977; Horn & Bayer 1984).[25]

5.4.4 A last observation

Both accounts of the Non-past's unavailability for expressing future reference in stative sentences have drawbacks. This in conjunction with the cross-linguistic robustness of the pattern raises the question of whether a pragmatic account is appropriate at all. I suggest that despite these difficulties, it is.

Evidence for this comes from the fact that there are some exceptions to the pattern, both in English and Hungarian. These exceptions make it implausible that the unacceptability of Non-pasts for future reference with statives is truth-conditional.

In English, some stative sentences are at least marginally acceptable with the simple Present for future reference, as in (61) ((61b) and (61c) from p.c. with Larry Horn, with contexts I have added).

(61) a. Context: I am teaching elementary science classes about how long it takes for geological changes to be noticeable. I say:

In the future, New Orleans (still) lies at the mouth of the Mississippi.

b. Context: Criminals meet up to discuss plans for a bank heist. The leader says:

We do our hacking over the weekend. Next Tuesday, when we break into the bank, John knows the combination and we open the safe.

c. Context: A director discusses a potential play with his theatre troupe:

OK, they meet in the first scene. Two weeks later, our characters are deeply in love, but then there's the big reveal and they can't stand the sight of each other.

This is reminiscent of the fact that in Hungarian, the Non-past in stative sentences is perfectly acceptable with the addition of temporal frame adverb *majd*, meaning 'in the future'. In contrast, the addition of other temporal frame adverbs does not improve acceptability, as in (62).

(62) Context: A friend asks, 'What are Jancsi's plans after we graduate?' I say:

25 This observation thanks to Larry Horn, p.c.

a. Jancsi Párizs-ban lak-ik **majd**.
János Paris-INE live.NPST.3SG in.the.future
'*János will live in Paris.*'

b. #Jancsi Párizs-ban lak-ik **jövő év-ben**.
János Paris-INE live.NPST.3SG next year
Intended: '*János will live in Paris next year.*'

In English, future-referring stative sentences containing the Present-inflected form of the copula are often perfectly acceptable, as in (63).

(63) a. Context: A friend wants to know if John will be home for Boxing Day. I tell her:

John is (still) at school next week.

b. Context: I tell a friend about our plans for changing the layout of our house.

The door is (still) at the end of the hall, even after the renovations.

c. Context: I look up my horoscope. It says to be careful, because:

Mercury is in retrograde next month.

In Hungarian, there is a form of the copula that is future-referring: *lesz*.[26]

(64) Context: I meet a friend's baby son. Looking at her husband, I say:

János magas **lesz**!
János tall be.future.3SG
'*János will be tall!*'

All these examples suggest that under some circumstances, the Non-past in both English and Hungarian is compatible with future reference in sentences containing stative predicates. Further, *fog* is considered to inflect for tense, so any sentence containing *fog* also contains the Non-past. So, there is no inherent incompatibility between the Non-past and future temporal reference. Likewise for English: future-referring utterances can be inflected for Present tense. This suggests the reason why the Non-past is not readily available for expressing future reference in stative sentences may not hinge on the truth-conditional meaning of the utterance. Rather, a pragmatic analysis of the Non-past's unavailability for future reference in sentences containing statives like those presented above is promising.

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26 An added twist is that *lesz* can convey epistemic modality with present temporal reference, suggesting that there are exceptions to its obligatory future reference.

(i) Context: A friend calls and asks where János is at the moment. I tell her:

A szobájában **lesz** (most).
the room.POSS.INE be.FUT (now)
'*He'll be in his room (now).*'

5.5 Future reference with dynamic predicates

Both the Non-past and *fog* can give rise to future-referring readings in sentences containing dynamic predicates. However, speakers exhibit some preferences for the Non-past over *fog*, and vice versa, depending on the lexical aspect of the predicate involved. The following sections briefly explore what factors may contribute to these preferences.

Durativity and telicity play a role in lexical aspect, and in determining the range of readings that are available with the Non-past and *fog*.

Durativity of a predicate means that the temporal trace of the event extends over some interval:

(65) **Durativity**: Given some non-punctual interval i, a predicate P is durative iff $P(e)(w) \wedge \tau(e) = i$

A predicate is telic if it lacks the Subinterval Property. The Subinterval Property states that iff a predicate P holds at some interval i, then P holds of every subinterval of i (adapted from Bennett & Partee 1978: 72 and Krifka 1998: 1). There have been many proposals for how telicity is best captured (Borik & Reinhart 2004; Filip 2004), but the following definition from Dowty (1986) will be sufficient here.

(66) A sentence φ is an accomplishment/achievement...iff it follows from the truth of φ at an interval i that φ is false at all subintervals of i. (Dowty 1986: 4)

Recall that the four predicate types and their relevant properties are as in the table below (repeated from S3).

	Telic	Durative	dynamic
Accomplishment	✓	✓	✓
Achievement	✓		✓
Activity		✓	✓
Stative		✓	

5.5.1 Accomplishment predicates

Both *fog* and the Non-past can give rise to future reference in sentences containing accomplishment predicates, but some speakers exhibit a preference for the Non-past in future-referring sentences containing accomplishment predicates.

Non-past sentences containing dynamic telic (accomplishment) predicates can give rise to a range of distinct readings. These readings can differ in terms of both their temporal and aspectual properties. However, in the absence of temporal frame expressions and without contextual cues conveying a clear temporal reference, Non-past sentences containing accomplishment predicates are generally interpreted as future-oriented, as in (67).[27]

(67) Context: A friend calls and asks, 'so, what's going on today?' I respond:

27 This was ascertained by providing the sentence in (67) and asking 17 informants to provide both a translation and a context in which (67) could be uttered. The majority of respondents (11) interpreted the event as commencing at or after speech time. 3 of the remaining respondents offered responses suggestive of readings associated with sportscasting (the speaker, observing Laci's actions, narrates: "now Laci is in the kitchen, now he is baking a cake, now he serves the cake").

Laci **meg-süt** egy tortát.
Laci PART-bake.NPST.3SG a cake.ACC
'*Laci will bake a cake.*' Future

I suggest that the tendency of speakers to interpret Non-past sentences containing accomplishment predicates as future-referring results from the fact that in Hungarian, sentences containing accomplishment predicates are overwhelmingly perfective, and Non-past perfective sentences containing accomplishment predicates are obligatorily future-referring.

If an imperfective operator is present, event-in-progress or characterizing readings can arise as in (68a) and (68b), respectively.

(68) a. Context: I'm coordinating complex dinner plans. I inform a friend that if he arrives right on schedule...

Laci (éppen) **süt** **meg** egy tortát.
Laci (ÉPPEN) bake.NPST.3SG PART a cake.ACC
'*Laci will be (finishing) baking a cake.*' Event-in-progress

b. Context: I tell a friend about Béla's weekend habits.

Béla **5 kilométer-t** **fut** (szombaton).
Béla 5 kilometer-ACC run.NPST.3SG (Saturday)
'*Béla runs 5 kilometers on Saturday(s).*' Characterizing (habitual)

Telicity and perfectivity are closely connected in Hungarian, leading to the ongoing, lively debate as to whether Hungarian verbal particles are associated with telicity or perfectivity (e.g. Horvath 1978, Kiefer 1982, Papp 1989b, Csató 1994, Kiefer 1997, Grimes 2003, Csirmaz 2004a, É Kiss 2006b, É Kiss 2006a, Ürögdi 2006, Dékány 2008, a.o.). While I follow Csató (1994), Csirmaz (2004a), É Kiss (2006a), É Kiss (2006b), and others in taking particles to be telicizing rather than perfectivizing, the fact remains that sentences containing telicizing verbal particles in Hungarian are also perfective a vast majority of the time (see §4.3 in Chapter 2 for details, and Csirmaz 2004a for an analysis). Hence, imperfective sentences containing accomplishment predicates are relatively rare in Hungarian, particularly those giving rise to event-in-progress readings. Take, for example, the sentence in (69).

(69) Context: I want to give Mari more details about János's running, so I say:

János fut el a torony-hoz.
János run.NPST PART the tower-ALL
'*János is running (all the way) to the tower.*'

The particle *el* telicizes, and highlights that the event's completion is important. To assert that the event is ongoing at some interval, and to also signal the importance of the event's culmination requires a context in which both facts are relevant to the discourse. This limits the range of contexts in which such readings arise.

Further, some complex verbs cannot occur in imperfective sentences at all unless the particle surfaces post-verbally. For these verbs, a pre-verbal particle concretely indicates perfectivity, and event-in-progress readings are unavailable as with the complex verb *meg-süt* 'bake completely' in (70). Again, see §4.3 of Chapter 2 and Csirmaz (2004a) for details.

(70) Context: I tell a friend what Laci is doing at the moment.

#Laci **meg-süt** egy tortát.
Laci PART-bake.NPST.3SG a cake.ACC
Intended: '*Laci is (completely) baking a cake.*' Event-in-progress

This means that if a speaker encounters a Non-past sentence containing an accomplishment predicate without clear contextual clues as to its aspectual properties, they are likely to infer that it is perfective.

Perfective sentences containing accomplishment predicates can only give rise to readings with future temporal reference. The reasoning behind this claim is as follows. (71) gives the final output of the Non-past applied to a perfectivized accomplishment predicate.

(71) a. Context: A friend says, 'we are making some plans to celebrate Zsuzsa's birthday...

Laci **meg-süt** egy tortát.
Laci PART-bake.NPST.3SG a cake.ACC
'*Laci will bake a cake.*'

b. $\text{PERF}(\lambda e\,[\,\text{L-bake-a-cake}(e)\,])(npst) = \lambda w : i \subseteq [now, +\infty)\,.\,\exists i'\,[i' \subseteq i \wedge \text{L-bake-cake}(e)(w) \wedge \tau(e) \subseteq i']$

(71b) denotes a proposition that holds of w iff there is some interval i' that is contained in i, which is itself contained in $[now, +\infty)$, and the run-time of the Laci-baking-a-cake event is contained in i'. In other words, when the Non-past applies to perfectivized accomplishment predicates, the entire run-time of the event must be contained in the reference interval, and therefore cannot precede the speech time. This means that in a perfective Non-past sentence containing an accomplishment predicate, the event can only begin at or after the speech time, as in the examples in (72), respectively.

(72) a. Context: I explain what Laci is about to do for a friend's birthday.

Laci **meg-süt** egy tortát.
Laci PART-bake.NPST.3SG a cake.ACC
'*Laci (will now/is now going to) bake a cake.*' $now \subseteq_{ini} \tau(e)$

b. Context: Imagine that you are having a birthday party tomorrow. Your friend Tibor promised he would attend, but you doubt he will. When you confront him, he says:

El-megy-ek a buli-ba!
PART-go-NPST.1SG the party-ILL
'*I WILL go to the party!*' $now < \tau(e)$

In sum, the Non-past can only give rise to future readings and readings in which the event begins at speech time in perfective sentences containing accomplishment predicates. Along with the fact that imperfective sentences containing accomplishment predicates are relatively rare, this means that speakers infer that Non-past sentences containing accomplishments are future-referring.

The following question remains. The Non-past is sufficient for expressing future reference in sentences containing accomplishment predicates, and it is a more economical construction than the *fog* construction. So, why is *fog* also use for future reference in sentences containing accomplishment predicates, as in (73)?

(73) ʸNem fog-om el-magyaráz-ni önök-nek, mint mond-ott Busquets nekem...
NEG FOG-NPST.1SG PART-explain-INF 2PL-DAT, as say-PST.3SG Busquets DAT.1SG
'*I will not explain to you, what Busquets told me...*'

There are several possible reasons that speakers may choose *fog* over the Non-past for expressing future reference in sentences containing accomplishment predicates. *Fog* may be used when the aspect is imperfective, to disambiguate when perfectivity is difficult for hearers to infer, or in any circumstance when a speaker may want to emphasize futurity. See Chapter 6 for a discussion of why speakers may choose *fog* over the Non-past in a variety of speech acts.

5.5.2 Achievement predicates

The Non-past and *fog* can both give rise to future reference in sentences containing achievement predicates. However, because achievements are non-durative, the Non-past can give rise to either present or future-referring readings in sentences containing achievements, as in (74).

(74) a. Context: I express to a friend why I think János will be very happy over the weekend.

Pénteken, János kap-ja az ajándék-ot!
Friday János receive-3SG.NPST the present-ACC
'*János is getting a present (this weekend)!*' $now = \tau(e)$

b. Context: I point out to a distracted friend what is happening across the room at János's party.

János kap-ja az ajándék-ot
János receive-3SG.NPST the present-ACC
'*János is getting the present (currently).*' $now < \tau(e)$

That is, in a Non-past sentence containing an achievement predicate, the event can hold of the speech time itself, or of a moment following the speech time. This means that if the temporal reference of the sentence is not explicitly specified or inferable from the context, a Non-past sentence containing an achievement predicate is temporally ambiguous. As a result, *fog* may be preferred by speakers for expressing future reference with achievements, because its future reference is obligatory, as in (75b).

As with accomplishment predicates, speakers use *fog* regularly in sentences containing achievement predicates, as in (75).

(75) Context: My friend calls at noon and asks what Bela is doing today. I say:

a. Béla **fog** venni egy új biciklit.
Béla FOG.NPST.3SG buy.INF a new bicycle.ACC
'*Béla is going to buy a bicycle.*'

b. #Béla **fog** venni egy új biciklit.
Béla FOG.NPST.3SG buy.INF a new bicycle.ACC
Intended: '*Béla is buying/buys/was buying/bought a bicycle.*'

5.5.3 Activity predicates

Non-past sentences containing activity predicates allow for the widest range of readings of the four Vendlerian predicate types. They can equally well be imperfective or perfective, and present or future-referring. As a result, they can give rise to present event-in-progress, present characterizing, future perfective, future event-in-progress, or future characterizing readings.[28] This wide range of possible readings means that Non-past sentences containing activity predicates can be difficult to interpret without some clue as to their aspect and temporal reference.

As a result, speakers prefer that Non-past sentences containing activity predicates also contain future-oriented temporal frame expressions, as in (76).

(76) Context: I ask a friend what's going on this weekend. She says:

János zongorázik **holnap délután**.
János play.piano.NPST.3SG tomorrow afternoon
'*János will play the piano tomorrow afternoon.*' *Future*

In the absence of such temporal frame expressions, future readings are marginal, as in (77).

(77) Context: An friend calls to catch up and asks, 'What's János up to?' I respond:

??János zongorázik.
János play.piano.NPST.3SG
'*János will play the piano.*'

Imperfective aspect is inferred, and present event-in-progress or characterizing readings obtain instead, as in (78).

(78) Context: An friend calls to catch up and asks, 'What's János up to?' I respond:

János zongorázik.
János play.piano.NPST.3SG
'*János is playing the piano (right now).*'
'*János is playing the piano (habitually).*'

With the addition of a future-oriented temporal frame expression, the following future-referring readings are available:

(79) a. Context: I ask what our friends will be doing for the talent show. Mari tells me:

János **majd** zongorázik.
János in.the.future play.piano.NPST.3SG
'*János will play the piano.*'

b. Context: My little brother has been thinking of learning to play an instrument. I report to a friend that he has chosen piano:

28 Note that present-referring readings are unavailable in perfective sentences, as discussed in §5.1.

Tamás zongorázik **jövő év-ben**.
Tamás play.piano.NPST.3SG next year-INE
'*Tamás will play the piano next year.*' Habitual

c. Context: I express that I don't think Mari should call János at 6pm, because he will be busy. I say:

János (éppen) eszi a szendvics-et, **amikor Mari telefonál**.
János ÉPPEN eat.NPST.3SG the sandwich-ACC, when Mari call.NPST.3SG
'*János will be eating when Mari calls.*'[29] Event-in-progress

The wide range of readings associated with Non-past sentences containing activity predicates suggests that speakers may prefer *fog* to express future reference in any context in which the intended reading of a Non-past sentence might be unclear.

5.6 Conclusion

In this chapter, an analysis of future-referring uses of the Non-past and *fog* was proposed. On the view assumed here, the Non-past is a tense. As such, it has a presupposition that allows for reference intervals within the interval $[now, \infty)$. Depending on the predicate involved and the context in which it was uttered, a Non-past sentence can give rise to an event-in-progress, characterizing, or perfective reading with either present or future temporal reference.

A semantics for *fog* as a modal verb was proposed. Part of *fog*'s meaning is that it requires a metaphysical modal base, which restricts possible reference intervals to only those contained in the future of the speech time. *Fog*, therefore, gives rise to future reference obligatorily.

§5 offered two possible accounts of why sentences containing stative predicates can only express future temporal reference with *fog*, and with the Non-past they are obligatorily present-referring. §5 discussed the fact that the Non-past can give rise to future reference in sentences containing accomplishment sentences, but in sentences containing activity and achievement predicates, the Non-past rarely gives rise to future reference without future-referring temporal frame expressions or particularly clear contextual cues.

In sum, this chapter proposed a semantics for the Non-past and *fog* that accounts for distributional differences between future-referring utterances based on their semantics, context, and properties of the predicates involved. In Chapter 6, we'll see more about distributional differences between future-referring utterances containing the Non-past and *fog*, this time with different types of speech acts. As in this chapter, we will see that a wide range of interpretive and distributional differences can be explained with a very minimal, simple semantics for the constructions involved.

This exploration of future temporal reference adds to the growing body of literature on cross-linguistic future reference, and it offers insight into how future reference is expressed in a language with minimal tense and aspect systems.

29 In (79c), the whole subordinate clause acts as a temporal frame.

Chapter 6

Future reference in speech acts

6.1 Introduction

Chapter 5 introduced the two constructions available for expressing future reference in Hungarian: *fog* and the Non-past. A semantics was given for the Non-past as a tense, and for *fog* as a modal verb. The substantive difference between the semantics of the Non-past and *fog* is that the Non-past allows for reference intervals that include the time of utterance, and *fog* does not: it is obligatorily future-oriented. The analysis in Chapter 5 accounted for differences in the availability of these constructions for expressing future reference in sentences containing different predicate types. On this view, differences in distribution result from interactions between the temporal properties of the Non-past and *fog*, and the temporal properties of the four Vendlerian predicate types. However, there are differences in what is conveyed by the use of the Non-past and *fog* in future-referring utterances that were not covered in Chapter 5. Specifically, there are contexts in which one of these constructions is preferred over the other for conveying future temporal reference, and these patterns cannot be explained through just the interaction of their semantics with properties of predicates.

For example, given the argumentation in Chapter 5 §6 we might expect the number of future-referring *fog* sentences containing accomplishment predicates to be close to zero, because the Non-past alone is sufficient to give rise to future reference in sentences containing accomplishment predicates. This is not the case, however, as illustrated by the example in (1), for which both the Non-past and *fog* version are acceptable for many speakers.[1]

(1) Context: Imagine that your friend Mari comes over to help you prepare for János's birthday party. You want to describe how the preparations are going, so you say:

a. Laci **süt** egy tortát.
Laci bake.NPST.3SG a cake.ACC
'*Laci will bake a cake.*'

b. Laci **fog** süt-ni egy tortát.
Laci FOG.NPST.3SG bake.INF a cake.ACC
'*Laci will bake a cake.*'

This optionality suggests that the use of *fog* and the Non-past may possibly be determined by factors other than the aspectual properties of the embedded predicates. This chapter focuses on identifying these factors.

1 Though not necessarily for the same speakers, as described in §5.2

I will argue that properties of certain kinds of contexts influence whether speakers will prefer *fog* or the Non-past. The preferences shown by speakers between the two constructions appear to depend on what kind of speech act is involved. To this end, we will look at how the Non-past and *fog* are used for future reference in a range of speech acts. §2 introduces some notions used to talk about speech acts and specify their properties. Searle's classification of illocutionary acts and his analysis of how indirect speech acts are interpreted (see Searle 1969, 1975, 1976; Searle & Vanderveken 1985) allow for a characterization of the contextual properties that condition the choice between the Non-past and *fog* in a range of speech act contexts. In §3, an effect in which the Non-past is preferred for immediate future reference under certain conditions is explored, and an analysis hinging on properties of the speech acts in question and the temporal properties of the Non-past and *fog* is offered. §4 describes some unresolved puzzles in which the Non-past and *fog* exhibit different levels of acceptability in certain contexts, and §5 briefly discusses how speakers sometimes do not agree in their judgements of whether the Non-past or *fog* is preferable in a given context. §6 concludes.

6.1.1 Recap: the semantics of the Non-past and *fog*

As proposed in Chapter 2 and recounted in Chapter 5, the Non-past is defined as a tense with the following semantics:

(2) $[\![npst]\!]^{g,c}$ is defined iff c provides an interval $i \subseteq [now, +\infty)$. If defined, $[\![npst]\!]^{g,c} = i$

In Hungarian, the imperfectivizing and perfectivizing operators are covert (see Chapter 2, §4). I adopt a standard semantics for a perfective operator. This version is from Deo (2009a), but is essentially the same as in, for example, Iatridou et al. (2001) and Hacquard (2006). PERF applies to predicates of events or intervals, and returns a set of intervals such that there exists some interval i' contained in i, and P is instantiated AT i' in w (See Chapter 5, §3 for details).

(3) a. PERF: $\lambda P \lambda i \lambda w . \exists e [\tau(e) \subseteq i \wedge (P)(e)(w)]$[2]

I borrow the imperfective operator from Deo (2009b, 2015). IMPF combines with a predicate of eventualities or intervals P and an interval i, and returns the proposition that there is some (super)interval j that contains i such that every cell k in a regular partition $\mathscr{R}^c_j$ of j COINcides with P. The partition measure is determined by what is appropriate in a given context and properties of the event description.

(4) IMPF: $\lambda P \lambda i \lambda w . \exists j [i \subseteq_{ini} j \wedge \forall k [k \in \mathscr{R}^c_j \rightarrow \text{COIN}(P, k, w)]]$

This definition of the imperfective operator predicts that event-in-progress and characterizing readings arise depending on the granularity of the partition measure relative to the length of j, i, and the length of the typical event's run-time, $\tau(e)$.

In the sample derivation in (5), IMPF applies to the predicate of eventualities (the uninflected sentence radical 'john-run') to form a predicate of intervals. The Non-past denotes the interval i, corresponding to the reference interval, determined in context. *npst* is defined iff i is contained in $[now, \infty)$.

(5) a. Context: A friend asks, 'What's János up to today?' I say:
János fut.
János run.NPST.3SG
'*János is running/will run.*'

2 I do not believe my claims hinge on PERF denoting that $\tau(e) \subseteq i$ rather than the also popular $\tau(e) = i$. See Csirmaz (2004b), a.o. for this alternative view.

b. $[\![\text{john-run}]\!] = \lambda e\,[\,\text{john-run}(e)]$

c. $\text{IMPF}(\lambda e\,[\,\text{john-run}(e)])$
$= \lambda P \lambda i \lambda w.\,\exists j[\,i \subseteq_{ini} j \wedge \forall k[\,k \in \mathscr{R}^c_j \rightarrow \text{COIN}\,(P,k,w)\,]]$
$(\lambda e\,[\,\text{john-run}(e)])$
$= \lambda i \lambda w.\,\exists j[\,i \subseteq_{ini} j \wedge \forall k[\,k \in \mathscr{R}^c_j \rightarrow \text{COIN}\,(\lambda e\,[\,\text{john-run}(e)]k,w)\,]]$
$= \lambda i \lambda w.\,\exists j[\,i \subseteq_{ini} j \wedge \forall k[\,k \in \mathscr{R}^c_j \rightarrow \forall w' \in Hist_{inr}(w) \rightarrow \exists e[\text{john-run}(e)$
$(w') \wedge \tau(e) \circ k]]]$

d. $\text{IMPF}(\lambda e\,[\,\text{john-run}(e)])(npst)$
$= \lambda w : i \subseteq [now, +\infty).\,\exists j[\,i \subseteq_{ini} j \wedge \forall k[\,k \in \mathscr{R}^c_j \rightarrow \forall w' \in Hist_{inr}(w) \rightarrow \exists e[\text{john-run}(e)(w') \wedge$
$\tau(e) \circ k]]]$

The output in (5d) says that i must be contained in the interval $[now, +\infty)$. There is some superinterval of i, j, and every cell k of a regular partition of j overlaps with at least part of an interval of János running. The availability of event-in-progress and characterizing readings depends on the type of predicate involved as well as temporal properties of the context and any temporal frame expressions. Please see Chapter 5 for how these factors influence readings, and for how derivations in which NPST applies to perfectivized predicates proceed.

In Chapter 5, §3.3 it was argued that *fog* is best considered a modal auxiliary verb. *Fog* patterns syntactically like other modal auxiliary verbs in the language, and its restriction to uses in utterances with future temporal reference suggests a modal component. Modals are defined with respect to a modal base M and an ordering source O (Kratzer 1981). I propose the lexical entry for *fog* given in (6), where $Best(M_M)(O)(w)(now)$ is the set of worlds in the metaphysical modal base in w at the speech time that are best ranked with respect to the ordering induced by O in w at t (this notation is borrowed from Thomas 2014).

(6) $[\![fog]\!] = \lambda P \lambda i \lambda w.\forall w'[w' \in Best(M_M)(O)(w)(now) \rightarrow \text{AT}(P,i,w')]$

(6) says that $fog(P)(i)$ holds of a world w iff $P(i)$ holds in the best worlds w' in the metaphysical modal base according to the ordering source. The modal base is metaphysical, and the ordering source can be bouletic or inertial. *Fog* can apply to an imperfectivized or perfectivized predicate. The distribution of the Non-past versus *fog* to express future reference is determined in part by the range of readings that the aspectual operators allow for with each construction. A derivation with a perfectivized predicate is shown in (7).

(7) a. Context: A friend asks, 'What is Laci doing to help with the party?'
Laci meg **fog** süt-ni egy tortát.
Laci PART FOG.NPST.3SG bake.INF a cake.ACC
'*Laci will bake a cake.*'

b. $[\![\text{l-bake-a-cake}]\!] = \lambda e\,[\,\text{l-bake-a-cake}(e)]$

c. $\text{PERF}(\lambda e\,[\,\text{l-bake-a-cake}(e)])$
$= \lambda P \lambda i \lambda w.\,\exists i'[i' \subseteq i \wedge \text{AT}(P,i',w)]\,(\lambda e\,[\,\text{l-bake-a-cake}(e)])$
$= \lambda i \lambda w.\,\exists i'[i' \subseteq i \wedge \text{AT}(\lambda e[\text{l-bake-a-cake}(e)],i',w)]$
$= \lambda i \lambda w.\exists i'[i' \subseteq i \wedge \exists e[\text{l-bake-a-cake}(e)(w) \wedge \tau(e) \subseteq i']]$

d. $fog(\text{PERF}(\lambda e\,[\,\text{l-bake-a-cake}(e)]))$
$= \lambda P \lambda i \lambda w.\forall w'[w' \in Best(M_M)(O)(w)(now) \rightarrow \text{AT}(P,i,w')]$
$(\lambda i \lambda w.\exists i'[i' \subseteq i \wedge \exists e[\text{l-bake-a-cake}(e)(w) \wedge \tau(e) \subseteq i']])$
$= \lambda i \lambda w.\forall w'[w' \in Best(M_M)(O)(w)(now) \rightarrow \text{AT}((\lambda i \lambda w.\exists i'[i' \subseteq i$

$\wedge \exists e[\text{l-bake-a-cake}(e)(w) \wedge \tau(e) \subseteq i']]), i, w')]$
$= \lambda i \lambda w. \forall w'[w' \in Best(M_M)(O)(w)(now) \rightarrow \exists i'[i' \subseteq i \wedge \exists e[\text{l-bake-a-cake}(e)(w')$
$\wedge \tau(e) \subseteq i']]]$

Fog returns a function from intervals to propositions. The Non-past provides the interval i (see (2) for the definition of the Non-past), as shown in (8).

(8) $fog(\text{PERF}(\lambda e\,[\text{l-bake-a-cake}(e)]))(npst)$
$= \lambda w : i \subseteq [now, +\infty). \forall w'[w' \in Best(M_M)(O)(w)(now) \rightarrow \exists i'[i' \subseteq i \wedge \exists e[\text{l-bake-a-cake}(e)(w') \wedge \tau(e) \subseteq i']]]$

Because *fog* takes (only) a metaphysical modal base, it is felicitous only when the interval i is after *now*, and the Non-past is defined only when $i \subseteq [now, \infty)$. The set of intervals picked out by *fog* is therefore a subset of the set of intervals picked out by NPST: every interval with a left boundary after now is contained in the interval beginning now and extending infinitely into the future. See Chapter 5, §3 for more details.

Through the interaction of the meanings proposed for the Non-past and *fog* with properties of the predicates to which they can apply, Chapter 5 offered an account of a number of patterns of use between the Non-past and *fog* for future reference. Specifically, the Non-past is unavailable for future reference with stative predicates, and in most cases, even in sentences containing future-referring temporal frame adverbs. We saw that Non-past sentences containing achievement, activity, and accomplishment predicates all give rise to different ranges of interpretations, and these ranges correlate to how easily and in what kinds of contexts the Non-past can be used to give rise to future reference. Non-past sentences containing accomplishment predicates, for example, cannot give rise to present event-in-progress readings, and characterizing readings only arise in a narrow range of contexts. As a result, speakers interpret a sentence containing an accomplishment predicate to which the Non-past has applied as a future-referring one in most cases. In contrast, Non-past sentences containing achievement and activity predicates can easily give rise to event-in-progress and characterizing readings (among others), resulting in *fog* being relied upon in contexts in which intended future temporal reference is not otherwise clear.

§3, the meat of this chapter, explores how these same semantic properties of the Non-past and *fog* interact with properties of specific contexts to give rise to speaker preferences for one construction over the other in future-referring utterances. In §2, we'll appeal to Searle's work on speech acts to help specify the relevant contextual properties to account for this data (Searle 1969, 1975, 1976).

6.2 Speech acts

It was mentioned at the end of the discussion on each of the three dynamic (eventive) predicate types in Chapter 5 §6 (and in the introduction to this chapter) that *fog* is sometimes used even when future reference is contextually entailed, the use of future-oriented temporal frame adverbs, or both. Some of the examples of this phenomenon from Chapter 5 are repeated here in (9).

(9) a. γNem **fog-om** el-magyaráz-ni önök-nek, mint mond-ott Busquets nekem...
NEG FOG-NPST.1SG PART-explain-INF 2PL-DAT, as say-PST.3SG Busquets DAT.1SG
'*I will not explain to you, what Busquets told me...*' Accomplishment

b. Context: You are in high school. You meet up with a friend and mention tomorrow's exam. He tells you he hasn't studied, and you respond:

Nem tanul-tál? Meg **fog-sz** buk-ni!
NEG study-PST.2SG? PART FOG-NPST.2SG fail-INF!

'You didn't study? You're going to fail!' Achievement

c. Context: I ask what our friends will be doing for the talent show. Mari tells me:

János **fog** zongoráz-ni.
János FOG.NPST.3SG play.piano-INF
'*János will play the piano.*' Activity

What (9) illustrates is that *fog* and the Non-past are not always equally preferred even when a version of the sentence containing just the Non-past conveys future reference just as clearly as the version containing *fog*. That is, in some contexts, one construction is preferred over the other for reasons beyond those discussed in Chapter 5, and beyond the communication of future temporal reference. This section aims to provide a way of pinning down properties of some contexts in which the preference for the Non-past versus *fog* in future-referring sentences seems (for now!) to be unexplained by their semantics.

To facilitate an understanding of what factors might contribute to preferences for the Non-past versus *fog* beyond those stemming directly from differences in temporal and aspectual properties, we'll appeal to notions from the literature on speech acts. It is an extreme understatement to say that there has been a lot of (sometimes conflicting) work done on speech acts, but all we will need here is to borrow some ways of categorizing illocutionary acts, motivations for such categories, and a sketch of how indirect speech acts are interpreted from Searle's classic accounts (Searle 1975, 1976, a.o.). By allowing us to talk about what speakers are doing when they make certain kinds of utterances, we can identify properties of contexts, intentions, and the relationships between speaker and hearer that contribute to differences in how and when the Non-past and *fog* are each preferred for future reference. §2.1 lays out a brief sketch of Searle's illocutionary acts and how indirect speech acts are interpreted that will allow for a coherent discussion of the Hungarian facts.

§3 will then explore future reference with specific types of illocutionary acts. We will see that under certain circumstances, and with some types of illocutionary acts, the Non-past or *fog* is preferred. We will see that such differences sometimes cut across illocutionary categories in §3.1, in which for several illocutionary acts, the immediacy of the event impacts the choice between *fog* and the Non-past.

6.2.1 Illocutionary acts

On Austin's view (Austin 1975), we can think of any act of speech as consisting of three parts, or levels. There is the 'locutionary act', which consists of the phonetic act of physically making an utterance, as well as the 'phatic' act of uttering words, and the 'rhetic' act of using those words with a more or less definite meaning.[3] Secondly, in making the utterance, we do something. In other words, we are involved in some action. This is the 'illocutionary act'. There has been much debate over how to define the notion of an illocutionary act. Austin originally remarked that the illocutionary act is 'what one does *in* saying' something. In contrast, Bach (Bach & Harnish 1979; Routledge 2000) seems to view illocutionary acts as being closer to the speaker's intention in making the utterance. The third level is what one does *by* saying something, the 'perlocutionary act'. This can be thought of as the effect of making the utterance. These slippery notions are frequently explained through examples more than through formal definitions, so we can do the same: the locutionary act in (10) is the act of uttering the sentence. The illocutionary act is the act of making a request through uttering (10a), and the perlocutionary act, or the effect, is to (hopefully) obtain the ride.

3 This summary of Austin's definition of the locutionary act is via Searle (1968). Searle (and others) have argued that there are major problems with this definition, but we can sidestep this issue since it is illocutionary acts that are the focus of this chapter.

(10) a. '*Can you give me a ride?*'
b. **Locutionary act:** uttering '*Can you give me a ride?*'
Illocutionary act: REQUEST
Perlocutionary act: getting the hearer to give the speaker a ride

For this discussion of future reference in Hungarian, only illocutionary acts will be of concern. Several authors have proposed taxonomies of illocutionary acts (e.g. Austin 1975, Searle 1976, and Bach & Harnish 1979, among others). Many of these categorizations overlap substantially and often use different labels for the same groupings. I am essentially using Searle (1976)'s classification here, but have included some of the other labels that are also used in the literature. (11) contains examples of illocutionary acts from each of the categories that will be relevant to the purposes of this chapter, but this list is by no means intended to be exhaustive.

(11) a. **Assertives/Constatives/Representatives:** commit the speaker to the truth of the expressed proposition.
PREDICTIONS, **REPORTS**, ANSWERS, STATEMENTS, CONFIRMATIONS, ANNOUNCEMENTS, etc.
b. **Directives:** intended to cause the hearer to take a particular future action.
REQUESTS, **COMMANDS/ORDERS**, **WARNINGS**, ADVICE, THREATS, INSTRUCTIONS, FORBIDDING, etc.
c. **Commissives:** commit the speaker to some future action.
OFFERS, **INVITATIONS**, **PROMISES**, AGREEMENTS, VOLUNTEERING, etc.

The first category, assertives, includes what we typically think of as assertions or reports. These acts commit the speaker to claiming their belief in *P*. The relationship between temporal reference and this category has been conceived of in a variety of ways. Searle (1976) suggests that reports always have present or past temporal reference, whereas predictions always have future temporal reference. I am agnostic with regard to how temporal reference should be encoded in a taxonomy of speech acts, if it should at all. What I do want to do is point out that some illocutionary acts can only occur with utterances having certain temporal properties. For example, assertives contain assertions in which a plan for a future eventuality is reported, as well as assertions that make predictions about unplannable eventualities, as in (12). In both these types, the utterance involved is necessarily future-referring.

(12) a. Context: I am telling a friend about a party I've planned.

The party will start on Friday at 8. We will have dinner and play board games.

b. Context: I express to a friend that I am pessimistic about our weekend outing.

It's going to rain on Saturday, walking in the woods won't be any fun and our picnic will be ruined!!

With that said, assertives also contain announcements, answers, and confirmations, among other categories, which may involve reference to past, present, or future intervals, as with the announcements in (13).

(13) Context: The school morning announcement comes over the loudspeakers. The announcer says:

a. Attention students! Friday's pep rally will be postponed.

b. Attention students! Ravenna won last night's football game, and our team lost.

The second category, directives, consists of those illocutionary acts in which the speaker intends the hearer to take some action. Inherently, these speech acts involve eventualities with future temporal reference. Because at any given time, a speaker's utterance can only impact the future course of events, directives are incompatible with past temporal reference, nor can they give rise to interpretations in which the event or state is already in progress at speech time, as shown in (14).[4]

(14) a. **Request**:

Context: I'm behind on a school project, so I ask my mom for help:

(i) Could/can/will you help me finish my project?

(ii) #Could you (have)/would you (have) help(ed) me finish my project yesterday?

b. **Command**:

Context: I asked my son to do his chores, but he is reading instead. Annoyed, I say:

(i) Clean your room!

(ii) #Clean your room the whole day today!

c. **Warning**:

Context: A friend is about to cross the street when a car pulls around the corner at high speed. I say:

(i) Watch out for that car!

(ii) #Watch out for that car a minute ago!

Like directives, the third category of illocutionary act, commissives, is incompatible with past temporal reference and readings in which the eventuality is ongoing at speech time. These illocutionary acts commit the speaker to some course of action. Naturally, the action must follow the time of the utterance, which is

4 Larry Horn (p.c.) points out the following uses of the English imperative with past temporal reference.

(i) a. Please don't have fired me (on reading a letter from speaker's boss.
b. Please don't have left yet.
c. Please don't be home. (as I ring the doorbell)
d. Please don't be taller than me. (as she (or he) rings the bell for a blind date)

I do not consider these to be true directives. Following Searle, I take directives to be 'attempts...by the speaker to get the hearer to do something' (Searle 1976: 11). Although the sentences in (i) express desires/wishes, they are not utterances intended to cause a change in the facts about the world. Searle points out that the direction of fit for directives is world-to-words: the performance of the illocutionary act is intended to change the world to match the proposition. Necessarily, then, the change must be made in the future of the utterance time. Also see Condoravdi & Lauer (2009) for another characterization of directives that forces future reference.

the time at which the speaker commits to the action. If the proposed action or commitment is before the speech time, the utterance is infelicitous.[5]

(15) a. Context: At a party, the host comes around with a bottle. She says:

Would you like some wine? Offer

b. Context: On leaving class with friends, I ask a new acquaintance:

(i) Will you join us for lunch? Invitation

(ii) #Will you join us last week for lunch?

c. Context: I'm late with an assignment. I promise my professor:

(i) I will finish the project by Monday! Promise

(ii) #I will finish the project last week!

6.2.2 Indirect speech acts

A matter of much debate in work on speech acts is how best to deal with the fact that many speech acts (particularly those belonging to the above categories) are communicated indirectly. What does it mean to be indirect? Following Searle (1975), we can understand indirect speech acts as arising when a speaker says one thing, and intends to convey both what is literally conveyed by the utterance, and something more. Perhaps the most classic example of an indirect speech act (from Searle 1975 and earlier work) is the following:

(16) Can you pass the salt?

The semantics of the sentence in (16) gives rise to a reading in which the speaker is asking whether the hearer has the ability (or is allowed) to pass the salt, and yet (16) is much more commonly understood as a request to pass the salt. That is, (16) is an example of an indirect speech act in which a speaker utters a sentence with one meaning, and intends both that meaning and another, in this case, a request for salt.

Searle labels the request for salt the 'primary' illocutionary act. That is, the main communicative goal of the utterance, which is indirect by definition, is the 'primary' illocutionary act. The literal meaning of the utterance (the question about the ability of the hearer) is the 'secondary' illocutionary act.

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5 Of course, one can report previous instances of commitment, as in (i), but in these instances, the commitment is made beforehand, and is not part of the utterance itself. Thus, these reports are not the same as actually making the commitment.

(i) a. Context: I tell a friend that I know János doesn't drink wine, because:
I offered him a glass of wine.

b. Context: Mari asks if I've seen some friends lately. I tell her no, but:
I invited them to the party.

c. Context: János fought with his insecure girlfriend. He tells me:
I promised her I would never leave.

There are a number of challenges in accounting for properties of indirect speech acts and how they arise. How does it come about that certain constructions allow for indirect speech acts to arise while others do not? That is, requests very frequently have the form 'can you X' like in (16), but other constructions with similar semantics are not equally acceptable as requests, as in (17).

(17) a. ?Do you have the ability to pass the salt?

Meanwhile, other indirect speech acts are much more difficult to construe as involving any kind of convention of usage, as in (18) (see Morgan 1977 and Bach & Harnish 1979 a.o. for discussion of whether, to what degree, and which indirect speech acts exhibit some degree of conventionalization), as in the example from Searle (1975: 61). In this scenario, student Y rejects X's proposal for a movie date indirectly by conveying that he is occupied through uttering the statement in (18b).[6]

(18) a. Student X: Let's go to the movies tonight.
b. Student Y: I have to study for an exam.

Differences like the sense of conventionalization in (16) and the lack thereof in (18) raise the question of whether the primary illocutionary act is somehow encoded in the meaning of certain constructions, while examples like (18) require an analysis which separates the literal meaning of the sentences from the primary illocutionary act. Searle offers an account of indirect speech acts that relies on background information, a theory of speech acts, and general principles of conversation, which he hopes can overcome these problems. The essential mechanism is a way by which a hearer can derive the primary illocution from a literal illocution when an indirect speech act is intended. This consists of the following steps from Searle (1975: 63). In this example, which is based on the exchange in (18), the hearer is attempting to retrieve the content that Student Y is rejecting the proposal to go to the movie.[7]

(19) a. STEP 1: I have made a proposal to Y, and in response he has made a statement to the effect that he has to study for an exam (facts about the conversation).

b. STEP 2: I assume that Y is cooperating in the conversation and that therefore his remark is intended to be relevant (principles of conversational cooperation).

c. STEP 3: A relevant response must be one of acceptance, rejection, counterproposal, further discussion, etc. (theory of speech acts).

d. STEP 4: But his literal utterance was not one of these, and so was not a relevant response (inference from steps 1 and 3).

e. STEP 5: Therefore, he probably means more than he says. Assuming that his remark is relevant, his primary illocutionary point must differ from his literal one (inference from steps

6 I am not totally convinced by this example: it seems to me that the 'I have to X' construction is a somewhat conventionalized way of rejecting proposals, but I have no doubt that more convincing examples of non-conventionalized indirect speech acts could be constructed, perhaps like in (i).

(i) a. Student X: Let's go to the movies tonight.
b. Student Y: The circus is coming to town, for tonight only...

7 The steps involved differ slightly between contexts and with different utterances, as illustrated by the difference between (41) and Searle's example derivation in Searle (1975: 73) of the asking for salt request in (16).

2 and 4).

f. STEP 6: I know that studying for an exam normally takes a large amount of time relative to as single evening, and I know that going to the movies normally takes a large amount of time relative to a single evening (factual background information).

g. STEP 7: Therefore, he probably cannot both go to the movies and study for an exam in one evening (inference from step 6).

h. STEP 8: A preparatory condition on the acceptance of a proposal, or on any other commissive, is the ability to perform the act predicated in the propositional content condition (theory of speech acts).

i. STEP 9: Therefore, I know that he has said something that has the consequence that he probably cannot consistently accept the proposal (inference from steps 1, 7, and 8).

j. STEP 10: Therefore, his primary illocutionary point is probably to reject the proposal (inference from steps 5 and 9).

I want to abstract away from the problems that the literature has pointed out with Searle's account of how such derivations proceed, and focus on just the fact that the Non-past and *fog* can both be used in indirect speech acts.[8] This abstraction should not be problematic, because the analysis of the data presented in the following sections does not hinge on any particular fact unique to Searle's analysis, but rather follows from what (I think) are some fairly basic assumptions about how the interpretation of indirect speech acts must proceed. With that said, I have not tested whether this explanation works with other accounts of indirect speech acts, and this might be a fruitful direction for future research.

In the following sections, we'll be interested in how the Non-past and *fog* are used in indirect speech acts with the following types of illocution.

(20) a. Assertives: **PREDICTIONS**, **REPORTS**
b. Directives: **REQUESTS**, **COMMANDS/ORDERS**, **WARNINGS**
c. Commissives: **OFFERS**, **INVITATIONS**, **PROMISES**

A majority of Hungarian informants show a marked preference for the Non-past or *fog* in the categories that are underlined, while those that are not underlined exhibit individual variation in whether the Non-past or *fog* is preferred. In the cases in which speakers show a general consensus in which construction is preferred, I will propose that interactions between properties of contexts in which certain illocutionary acts occur, facts about how indirect speech acts are derived, and temporal properties of the Non-past and *fog* can explain these judgements.

6.3 Immediacy in future-referring speech acts

As we have seen, the Non-past and *fog* are equally well-suited to express future reference in assertive sentences containing dynamic predicates when future reference is made clear through contextual cues or with temporal frame expressions, as in (21).

8 The Non-past and *fog* could be considered conventionalized in the same way that the request in (16) is, but an analysis of this aspect of their use is beyond the scope of this chapter.

(21) a. Context: I call a friend at her house and ask: What are you doing right now? Are you busy? She responds:

El-megy-ek a város-ba.
PART-GO-NPST.1SG the city-ILL
'*I'm going (out) into the city.*' Non-past

b. ?Jó akkor **most** oda megy-ek.
good then now there go-NPST.1SG
'*Good then I'm going to go (there) now.*'

c. ?Most **fog-ok** oda menni.
now FOG-NPST.1SG there go.INF
'*I'm going to go (there) now.*' *fog*

(21) also shows that the Non-past and *fog* are both available to express immediate future reference. In (21a), the fact that the speaker answered the phone in her home entails that the event of her going into the city cannot be in progress at speech time: it must occur in the future, and the implication is that she is planning to leave immediately. In (21b) and (21c), the word *most* 'now' conveys that the reference interval cannot be located anywhere in the future of the speech time, but rather must be immediately in the future. Note that the same constructions can be used equally well when the reference time begins some distance into the future, as in (22), which shows examples of both *fog* and the Non-past giving rise to future reference of varying distance, made explicit by temporal frame expressions.

(22) a. ?Én holnap oda megy-ek venni cipőt...
I tomorrow there go-NPST.1SG buy.INF shoes...
'*I am going there tomorrow to buy shoes...*'

b. ?Holnap oda **fog-ok** menni...
tomorrow there FOG-NPST.1SG go.INF
'*Tomorrow I am going to go there...*'

c. ?Jövőre oda **fog-ok** menni zarándokút-ra.
next.year there FOG-NPST.1SG go.INF pilgrim-SUB
'*Next year I will go there on a pilgrimage.*'

d. ?Jövoře oda megy-ek ha minden igaz.
next.year there go-NPST.1SG if all true
'*Next year I'll go there if I'm right.*'

From looking at the assertions above, it seems as though immediacy has no bearing on whether speakers use the Non-past or *fog*, but we will see in the sections below that this is not the whole story: with some illocutionary acts, the Non-past is preferred for immediate future reference. There is preliminary evidence that this pattern holds at least with warnings, commands, requests and offers, as illustrated in §3.2.1 through §3.2.4. In §3.2.5, I propose that the Non-past is preferred for expressing immediate future reference in these circumstances because these speech acts involve a propositional content condition requiring future reference, which results in the Non-past and *fog* giving rise to a nearly equivalent range of readings. Under such circumstances, the Non-past is naturally used for immediate future reference because it allows for

reference intervals overlapping with the speech time. Via the same type of blocking relation discussed in the analysis of future reference in sentences containing stative predicates in chapter 5, we can account for why *fog* is preferred for more distant futures in these same speech acts.

6.3.1 Data

Warnings

Warnings inform a hearer that without action, some undesirable state of affairs is likely to come to pass, with the hope that the hearer will be able to avoid that outcome. Warnings come in a variety of flavours. Some involve an interlocutor who can control the outcome of the proposition, and some involve eventualities over which the interlocutors have no influence.[9] We'll see here that in both cases, the choice of whether to use the Non-past or *fog* to convey future reference in warnings depends at least in part on how immediate the threat is, or in other words, on how far into the future of the speech time the reference interval is located.

For example, the context in (23) is one in which the hearer is taken to have some control over whether *P* comes to pass: Agi could reach out for balance or support, or plant both her feet carefully. In this context, the reference interval at which *P* may come to pass is immediately after the speech time. Both sentences are perfectly acceptable, and some speakers will likely find no difference in acceptability between them. However, many speakers indicate that the Non-past is slightly preferred over *fog*, or at least, it conveys a sense of immediacy lacking with *fog*.

(23) Context: Imagine that your friend Agi is balancing on the edge of a sidewalk. Agi starts to lose her balance, and it looks like she is going to fall into the street. To warn her, you say:

a. Vigyázz, **el-es-él**!
look.out.NPST.SUBJ.2SG, PART-fall-NPST.2SG
'*Look out, you're going to fall!*'

b. ?Vigyázz, el **fog-sz** es-ni!
look.out.NPST.SUBJ.2SG, PART FOG-NPST.2SG fall-INF
'*Look out, you're going to fall!*'

In contrast, the context in (24) is one in which the danger is not imminent: Zoli's laces have been undone all day. There is no telling when he will trip over them, or even if he will at all. Rather, the warning seems to convey just that it is possible or likely that he will trip at some future time, unless he takes action and ties his laces. In this case, *fog* is strongly preferred over the Non-past. Few speakers find the Non-past version acceptable.

(24) Context: Imagine that your friend Zoli has been walking around all day with his shoelaces untied. You think he should be more careful, so you say:

a. ?Vigyázz, **el-es-él**!
look.out.NPST.SUBJ.2SG, PART-fall-NPST.2SG
'*Look out, you're going to fall!*'

9 When the speaker can control the outcome of *P* and warns a hearer that *P* may come to pass, it might be more informatively characterized as a THREAT, however.

b. Vigyázz, el **fog-sz** es-ni!
look.out.NPST.SUBJ.2SG, PART FOG-NPST.2SG fall-INF
'*Look out, you're going to fall!*'

In sum, *fog* is more appropriate for a warning about an eventuality that might come to pass at some indefinite time in the future, while for warnings in which *P* is imminent, the Non-past is preferred by many speakers.

The examples of warnings in (23) and (24) all involved a hearer who could influence whether the outcomes described by the proposition comes to pass. The pattern in which the Non-past is preferred for immediate future reference and *fog* is preferred for more distant future reference also holds in contexts in which neither interlocutor can influence the outcome of *P*, as in (25), in which the speaker warns the hearer that a house is in imminent danger of being hit by a tornado.

(25) Context: Imagine that you are driving home and see a tornado approaching your neighbourhood. You rush home, and run to warn your neighbours. You knock on the door, and say:

a. ?Jön egy forgószél! El **fog-ja** ér-ni a ház-at!
come.NPST.3SG a tornado! PART FOG-NPST.3SG reach-INF the house-ACC
'*A tornado is coming! It's going to hit the house!*'

b. Jön egy forgószél! **El-ér-i** a ház-at!
come.NPST.3SG a tornado! PART-reach-NPST.3SG the house-ACC
'*A tornado is coming! It's going to hit the house!*'

As with the previous examples, the Non-past seems to convey a greater sense of urgency than *fog*. Some speakers report that they find both sentences in this context odd without an overt temporal frame adverb to indicate just how immediate the threat is, and prefer versions as in (26) with *mindjárt*, which means 'imminently'.

(26) a. Jön egy forgószél! Mindjárt el **fog-ja** ér-ni a ház-at!
come.NPST.3SG a tornado! presently PART FOG-NPST.3SG reach-INF the house-ACC
'*A tornado is coming! It's going to hit the house!*'

b. Jön egy forgószél! Mindjárt **el-ér-i** a ház-at!
come.NPST.3SG a tornado! presently PART-reach-NPST.3SG the house-ACC
'*A tornado is coming! It's going to hit the house!*'

Even when *mindjárt* 'presently/imminently' is added, many speakers find that the version containing the Non-past conveys a greater sense of urgency than the version containing *fog*.[10]

In contrast, the context in (27) makes it clear that the danger (in this case, a hurricane) is not immediate, and the examples in (27a) and (27b) include temporal frame expression *kedden* 'on Tuesday', which explicitly marks the reference interval.

(27) Context: Imagine that you are watching the news on tv. A hurricane is predicted to make landfall in your area in a few days, and the newscaster is warning viewers to begin preparing. She says:

10 With that said, all of the sentences in (25) and (26) are technically acceptable.

a. Jön egy hurrikán. Kedden, el **fog-ja** ér-ni a város-t.
come.NPST.3SG a hurricane. Tuesday.SUP, PART FOG-NPST.3SG reach-INF the city-ACC
'*A hurricane is coming. On Tuesday, it will reach the city.*'

b. Jön egy hurrikán. Kedden, **el-ér-i** a város-t.
come.NPST.3SG a hurricane. Tuesday.SUP, PART reach-NPST.3SG the city-ACC
'*A hurricane is coming. On Tuesday, it will reach the city.*'

Both sentences in (27) are perfectly acceptable, and unlike in (25) and (26), neither example seems preferable over the other for most speakers. Some speakers find that the Non-past is preferable, and others prefer *fog*, likely because the reference interval is made explicit by *kedden*. This rules out the possibility of an immediate future reading, rendering the difference in the temporal properties of the Non-past and *fog* irrelevant.

In sum, when speakers must retrieve the reference interval from context in warnings, the Non-past is preferred for immediate future reference, and *fog* for more distant future reference.

Requests

Requests also exhibit the immediacy effect seen with warnings in which the Non-past is preferred when the reference interval immediately follows the speech time and *fog* is preferred if the reference interval is contained further in the future.[11] Another way of thinking of this is that the Non-past conveys an immediacy that the *fog* version lacks. This pattern seems to be stronger for requests than for warnings. That is, fewer speakers found both versions acceptable with requests than with warnings. The sentence pairs in (28) show the preference for the Non-past in immediate requests.

(28) a. Context: I am cooking and realize we are out of milk, which I need for my recipe. I ask my boyfriend to go out to get milk.

(i) **El-mész** a bolt-ba tej-ért?
PART-go-NPST.2SG the store-ILL milk-CAUS
'*Will you go to the store for some milk?*'

(ii) ?El-menni **fog-sz** a bolt-ba tej-ért?
PART-go-INF FOG.NPST.2SG the store-ILL milk-CAUS
(Intended: '*Will you go to the store for some milk?*')

b. Context: I come down with my books in hand and ask my mom for help with math homework.

(i) **Segitesz** a leckémmel?
help.NPST.2SG the assignment.1SG.POSS.INSTR

11 I do not mean to imply that there are no other ways to make requests aside from with the Non-past or *fog*. The conditional mood, for example, is frequently used to express a request, as in (ia).

(i) Context: Asking for help while moving.
a. **Segitenél** ezzel a dobozzal?
help.NPST.COND.2SG this.INSTR the box.INSTR
'*Would you help me with this box?*'

'*Will you help me with my homework?*'

(ii) ?Segiteni **fogsz** a leckémmel?
help.INF FOG.NPST.2SG the assignment.1SG.POSS.INSTR
(Intended: *'Will you help me with my homework?*')

In contrast, *fog* is sometimes preferred in sentences in which the run-time of the event is located further into the future from the speech time. In other words, *fog* is preferred in sentences in (29) shows the preference for *fog* with a request in which it is part of the common ground that the request is for help a week in advance. As with immediate future requests, this preference for *fog* seems stronger than the preference for *fog* in 'distant' warnings.

(29) Context: Imagine that you are planning to move next week. Your friend John is helping you pack boxes, and you ask him if he will also help you move them the following week on moving day. You ask:

a. ?**Segitesz** ezekkel a dobozzal?
help.NPST.2SG these.INSTR the box.INSTR
Intended: *'Will you help me with this box?*'

b. Segiteni **fog-sz** ezekkel a dobozzal?
help.INF FOG-NPST.2SG these.INSTR the box.INSTR
'*Will you help me with this box?*'

Offers

Likewise, the choice between the Non-past and *fog* to express future reference in offers depends on whether the reference interval immediately follows the speech time, or is some distance hence. In the following example, in which the context requires the reference interval to be immediately following the utterance time, the Non-past is preferred.

(30) Context: Imagine that you are hosting a dinner party. You come into the dining room with an open bottle of wine and want to offer some to your guests. You approach a guest and say:

a. **Iszik** bor-t?
drink.NPST.2SG wine-ACC
'*Will you have wine?*'

b. ?Inni **fog-sz** bor-t?
drink.INF FOG-NPST.2SG wine-ACC
(Intended: '*Will you have wine?*')

In (30), there is a strong preference for the Non-past over *fog*. However, if we provide a context in which the reference interval is clearly several days after the speech time, *fog* improves, as in (31).

(31) Context: Imagine that you are making plans with a friend to hosting a dinner party. You both know that the date for the party is two weeks away. You're trying to estimate how much wine will be needed, and you ask your friend:

a. ?**Iszik** bor-t?
drink.NPST.2SG wine-ACC
'*Will you have wine?*'

b. Inni **fog-sz** bor-t?
drink.INF FOG-NPST.2SG wine-ACC
(Intended: '*Will you have wine?*')

In the context in (31), the Non-past is dispreferred by most speakers.

Commands

As with warnings, requests, and offers, the Non-past is preferred in commands in which the action is intended to be undertaken immediately. That is, if the reference interval immediately follows the speech time, as in (32), the Non-past is more suitable than *fog*.

(32) Context: Imagine that your child, Lilla, has announced that she is going outside to play. You want her to clean her room first, so you say:

a. Nem, **ki-takarít-od** a szobádat!
NEG, PART-clean-NPST.2SG the room.POSS.2SG.ACC
'*No, (first) you are going to clean your room!*'

b. ?Nem, (először/előbb) ki **fog-od** takarít-ani a szobádat!
NEG, (first/before) PART FOG-NPST.2SG clean-INF the room.POSS.2SG.ACC
'*No, (first) you are going to clean your room!*'

In (32), both sentences are acceptable, but (51a) is reported to indicate more clearly that the command is intended to be obeyed immediately.

6.3.2 Analysis

This section provides an analysis of the pattern above, in which the Non-past is preferred for immediate future reference and *fog* is preferred for more distant future reference. This pattern does not arise in most contexts, and we have seen examples both in Chapter 5 and in this chapter in which the Non-past and *fog* are equally available for immediate future reference and distant future reference. On the other hand, the discussion of data above and the claim that this effect arises with directives and commissives is not intended to be understood as exhaustive. The analysis predicts that this pattern arises only in contexts under certain, but these conditions are not inherently limited to directives and commissives.

What are the conditions that lead to this pattern? Directives and commissives are alike in the sense that both are intended to commit an interlocutor to a course of action. Logically, that course of action must occur following the time of speech: we cannot commit to taking some past or ongoing action. Therefore, both commissives and directives rely on the hearer interpreting the proposition as giving rise to future reference.

Searle & Vanderveken (1985: 43) proposes that some speech acts impose requirements on the content

of the utterances that express them, called **propositional content condition**s.[12] Their formal definition is as follows, where I is the context of utterance.

(33) "Formally, a propositional content condition is determined by a function θ from I into $\mathscr{P}$(Prop) that associates with each possible context of utterance a set of propositions having a certain feature. Thus, for example, the function θ_{fut} that associates with each context of utterance i the set of all propositions that are future with respect to the moment of time t_i determines a propositional content condition. In case a function θ from I into $\mathscr{P}$ gives as value, for each context i, the set of all propositions which satisfy the propositional content conditions of an illocutionary force F with respect to that context, we will write $\theta = \text{Prop}_F$. Thus, for example, $\theta_{fut} = \text{Prop}_{\|predict\|}$ since θ_{fut} determines the propositional content conditions of a prediction. Since a proposition P may be future with respect to a moment t_i and past with respect to a moment t_j for different t_i, t_j such that $t_i < t_j$, $\text{Prop}_{\|predict\|}(i) \neq \text{Prop}_{\|predict\|}(j)$ for certain $i, j \in I$. The same proposition could be the content of a prediction in one context but not in another context. In case F has no propositional content conditions, $\text{Prop}_F(i) = \text{Prop}$. Thus, for example, $\text{Prop}_{\|assert\|}(i) + \text{Prop}$. Any proposition P can be the content of an assertion in an appropriate context of utterance. Such forces have *empty* propositional content conditions." (Searle & Vanderveken 1985: 43)

In (33), Searle and Vanderveken illustrate how a propositional content condition works with predictions. Contexts in which propositions are future-referring satisfy the propositional content condition of predictions, because predictions require future reference.

Likewise, I propose that commissives and directives require future reference, and thus $\theta_{fut} = \text{Prop}_{\|commissive\|}$ and $\theta_{fut} = \text{Prop}_{\|directive\|}$. This captures the intuition that because commissives and directives refer to future actions, they must be expressed with future-referring utterances.

(33) is not explicit about how futurity is expressed in θ_{fut}, and this as it should be. Predictions do not require that futurity is expressed through a particular mechanism, they just require that utterances be compatible with future temporal reference. Likewise, commissives and directives can be expressed in a myriad of ways, as in the examples of English commissives and directives in (34), in which all the sentences compatible with future reference are able to convey the directive.

(34) Context: I want to get the hearer to pass the salt, so I say:

a. Can you pass the salt?
b. Will you pass the salt?
c. Please pass the salt.
d. Could you pass the salt?
e. #Would you have passed the salt?
f. #Did you pass the salt?
g. #Please have passed the salt.

In other words, θ_{fut} should include both 'futures', whose main function is to express future reference (possibly obligatorily) as in (34b), and 'futurates', which are constructions compatible with future reference that are not obligatorily future-referring and may not include overt marking of temporal reference, like (34a).

12 Propositional content conditions were discussed in informal terms at least as far back as Searle (1969). Thanks to Larry Horn for this point.

With that said, not all future-referring or future-compatible constructions are available for conveying a commissive or directive. As mentioned in §2.2, some utterances are not so easily used to express certain kinds of indirect speech acts, even though their meaning seems compatible with what the speech act is intended to convey, as with the infelicitous examples in (35).

(35) Context: I want to get the hearer to pass the salt, so I say:

a. #Will you be able to pass the salt?
b. #Are you passing the salt?
c. #Are you capable of passing the salt?
d. #Are you gonna pass the salt?[13]

This suggests that there is quite a bit more going on in determining whether a given construction is available for use in an indirect directive than just futurity. This is okay: all it means is that $\theta_{fut} = \text{Prop}_{\|commissive\|}$ and $\theta_{fut} = \text{Prop}_{\|directive\|}$ are not the only propositional content conditions for commissives and directives. I'll set aside the question of what the full list of conditions might be, as all we need for explaining the data here is that the future reference condition is satisfied.[14]

What does all this have to do with immediacy? Recall that Non-past sentences containing achievement and activity predicates are compatible with a range of readings, including event-in-progress, characterizing, and future readings, as in (36).

(36) a. Context: Péter doesn't usually drink wine, but I see him across the room drinking something from a wine glass, so I go up to him and ask:

Iszik bor-t?
drink.NPST.3SG wine-ACC
'*Are you drinking wine?*' Event-in-progress

b. Context: I am doing a survey on alcohol consumption in local households, and I ask an interviewee about his habits:

Iszik bor-t?
drink.NPST.3SG wine-ACC
'*Do you drink wine?*' Characterizing

c. Context: I am helping set the table at Péter's dinner party, and I ask him if he plans to have wine with dinner, so that I know how many glasses to set out:

Iszik bor-t?
drink.NPST.3SG wine-ACC
'*Will you drink wine?*' Future

13 I believe that 'be going to' in this context conveys that the speaker wants to know if the hearer already has a plan to pass the salt, or if they have decided to pass the salt, or presupposes that they have a plan and asks when it will be put into action (see Copley 2009's examples about a sign offering to change oil in Madera on pg77). On this view, 'be going to' is not being used as a request: it is felicitous in (35), but conveys a different intent (even though the salt may still end up getting passed, in the end). Larry Horn (p.c.) points out that 'be going to' can sometimes be used in indirect commands, e.g. 'Are you gonna stop that racket already or what?'. To me, such cases only work if 'stopping the racket' is not new information. Regardless, (35) is not a request.

14 Please see Condoravdi & Lauer (2009, 2011) for more in-depth discussions of the requirements posed by various speech acts.

The presuppositional content condition on directives and commissives ensures that in contexts in which interlocutors understand an utterance containing the Non-past to be a directive or commissive, readings requiring any non-future temporal reference are ruled out. To substantiate this claim, we need to know how it is that a hearer figures out that the speaker intends their utterance to be understood as a commissive or directive. That is, for non-future readings of the Non-past to be eliminated from consideration, the hearer has to know that a request, command, offer, etc. is intended.

Searle (1975) proposes that indirect speech acts are successfully communicated when speaker says one thing but means another, and a cooperative hearer engages in a process of inference-building to come to the same conclusion. As spelled out in more detail in §2, this begins when a speaker makes an utterance whose literal meaning is not obviously relevant. In such a situation, the hearer will infer that because the speaker is rational and cooperative, there must be a way of understanding their meaning such that the utterance *is* relevant. Through inferences based on background information, what is said, and an understanding of speech acts, they conclude that an indirect speech act must be involved, and what kind. Searle (1975: 73) provides the following list of steps in this process in interpreting an indirect request for salt:

(37) a. STEP 1: Y has asked me a question as to whether I have the ability to pass the salt (fact about the conversation).

b. STEP 2: I assume that he is cooperating in the conversation and that therefore his utterance has some aim or point (principles of conversational cooperation).

c. STEP 3: The conversation setting is not such as to indicate a theoretical interest in my salt-passing ability (factual background information).

d. STEP 4: Furthermore, he probably already knows that the answer to the question is yes (factual background information). (This step facilitates the move to Step 5, but is not essential.)

e. STEP 5: Therefore, his utterance is probably not just a question. It probably has some ulterior illocutionary point (inference from steps 1, 2, 3, and 4). What can it be?

f. STEP 6: A preparatory condition for any directive illocutionary act is the ability of H to perform the act predicated in the propositional content condition (theory of speech acts).

g. STEP 7: Therefore, X has asked me a question the affirmative answer to which would entail that the preparatory condition for requesting me to pass the salt is satisfied (inference from Steps 1 and 6).

h. STEP 8: We are now at dinner and people normally use salt at dinner; they pass it back and forth, try to get others to pass it back and forth, etc. (background information).

i. STEP 9: He has therefore alluded to the satisfaction of a preparatory condition for a request whose obedience conditions it is quite likely he wants me to bring about (inference from steps 7 and 8).

j. STEP 10: Therefore, in the absence of any other plausible illocutionary point, he is probably requesting me to pass him the salt (inference from steps 5 and 9).

(37) show how an indirect request expressed using the English modal 'can' is successfully retrieved and

interpreted by the hearer.[15] Commissives and directives with the Non-past and *fog* are interpreted similarly. Let's take as an example the situation in (42), repeated here in (38).

(38) Context: A friend is helping you move to a new home. The next box to be moved is too heavy to carry alone, so you ask your friend for help:

Segitesz ezzel a dobozzal?
help.NPST.2SG this.INSTR the box.INSTR
'*Will you help me with this box?*'

The steps in (39), adapted from (37), show how a hearer (X) might retrieve the indirect request intended by the speaker (Y) in (38).

(39) a. STEP 1: Y has asked me a question about moving the box using the Non-past, which could be interpreted as ongoing, characterizing, or future-referring (fact about the conversation).[16]

b. STEP 2: I assume she is cooperative in the conversation and so the utterance has some aim or point (principles of conversational cooperation).

c. STEP 3: The conversational setting is not such as to indicate an interest in my box-lifting habits, or whether I already have a plan for helping (factual background information).

d. STEP 4: Furthermore, she probably already knows that I am not currently helping, so the ongoing reading is ruled out (factual background information).

e. STEP 5: Therefore, her utterance is probably not just a question. It probably has some ulterior illocutionary point (inference from previous steps). What can it be?

f. STEP 6: A propositional content condition on directives requires that they be expressed with utterances compatible with future reference (theory of speech acts).

g. STEP 7: Therefore, X has asked me a question that satisfies the propositional content condition for requesting my help (inference from steps 1 and 6).

h. STEP 8: We are moving boxes and the next box looks big and heavy. People often require a 2nd person to move big and heavy boxes (background information).

i. STEP 9: She has therefore alluded to the satisfaction of a propositional content condition for a request which she likely wants me to bring about (inference from steps 7 and 8).

j. STEP 10: Therefore, in the absence of any other plausible illocutionary point, she is probably requesting my help with the box (inference from Steps 5 and 9).

15 This process also works for 'be able to', which is not felicitous as an indirect speech act. Searle's convention of usage explains the infelicity of 'be able to', but opposing views of indirect speech acts (e.g. Lepore & Stone 2014) claim this is Non-Gricean and non-pragmatic. For simplicity, I stick to Searle's analysis, and determining whether another analysis works better for the Hungarian cases herein is a matter for future research.

16 Technically it could also receive a future-referring ongoing or characterizing reading.

Steps 3 and 4 require some further explanation. Given that the Non-past is associated with several aspectually and temporally distinct readings, the hearer needs to evaluate whether each of these readings are relevant in the context. The characterizing reading is not plausible: it would ask whether X has a habit of helping with the particular box in question. The ongoing reading is not plausible: Y can no doubt see that X is not helping with the box. The future reading asks whether X intends to help with the box. At first glance, this seems like a possible interpretation, but I do not think it is right. For X to have an intention to help at the time of Y's asking, X needs to have been able to predict that Y would want help with the box. Further, Y would need to know that X knew which box was next and that Y would want help. Essentially, the future reading of (38) is asking whether X already has a plan to help with the box. The distinction between such a question and a request is brought out by the difference between English 'will', which is natural as a request, and 'be going to', which is not:

(40) a. Will you help me with this box?
b. Are you going to help me with this box?

The question in (40b) asks whether the hearer already intends to help with the box, and conveys that that the speaker has an expectation for help that has not been met. The remainder of the steps in (39) proceed as in the examples from Searle (1975).

In sum, if a hearer concludes through this process that a commissive or directive was intended, the hearer must also understand that the proposition uttered by the speaker can only be interpreted as future-referring, because the speaker intends herself or the hearer to commit to some *future* action. As illustrated in steps 3 and 4 of (39), any other temporal reference is inappropriate for the context, and this is further reinforced by the propositional content condition requiring future reference. Thus, a Non-past sentence used as a directive or commissive illocutionary force cannot give rise to the event-in-progress and characterizing readings otherwise associated with the Non-past.

In a context in which non-future readings are ruled out, the only difference between the temporal properties of the Non-past and *fog* is that the presupposition associated with the Non-past allows for the inclusion of *now* in the reference interval, while the temporal restriction of *fog*'s modal base does not, as shown in (41).

(41) a. $[\![\text{NPST}]\!]$ is defined iff c provides an interval $i \subseteq [now, +\infty)$
b. $[\![\text{FOG}]\!]$ is defined iff c provides an interval $i > now$

The reference intervals compatible with *fog*'s modal base are a subset of the intervals compatible with the Non-past's presupposition. This means that $\text{FOG}(P)(i)$ asymmetrically entails $\text{NPST}(P)(i)$. Recalling the reasoning from §2.3, this relation means that $\text{FOG}(P)(i)$ is the stronger member of a Horn scale $\langle \text{FOG}, \text{NPST} \rangle$. Use of the weaker alternative, the Non-past, implies that the speaker is not in a position to utter the stronger alternative *fog*. When the Non-past is used, then, it is implied that the reference interval must begin *now*, immediately, otherwise *fog* would have been used. Thus in an utterance understood as an indirect commissive or directive, the use of the Non-past signals that the speaker is talking about P happening immediately. For example, if the sentence in (42) is uttered in the given context, it can only be understood as rational and relevant to the circumstances if it is intended as a directive. When the Non-past is used as a directive, non-future readings (event-in-progress and characterizing) are unavailable. The only available reading is a future-referring one. The speaker is inferred to use the weaker Non-past because they intend to convey that help is required immediately, not later.

(42) Context: A friend is helping you move to a new home. The next box to be moved is too heavy to carry alone, so you ask your friend for help:

Segitesz ezzel a dobozzal?
help.NPST.2SG this.INSTR the box.INSTR
'*Will you help me with this box?*'

In contrast, the use of *fog* conveys just that help is required at any point in the future. If the context provides a reference interval that is immediate, *fog* seems out of place, as in (43).

(43) Context: A friend is helping you move to a new home. The next box to be moved is too heavy to carry alone, so you ask your friend for help:

?Segiteni **fog-sz** ezzel a dobozzal?
help.INF FOG-NPST.2SG this.INSTR the box.INSTR
'*Will you help me with this box?*'

However, because the Non-past is the weaker version, if a speaker is in a position to use the stronger version, *fog*, they are required to do so. Thus, if the request for help involves a reference time beginning further in the future than *now*, *fog* is preferred, as in (44).

(44) Context: Imagine that you are planning to move next week. Your friend John is helping you pack boxes, and you ask him if he will also help you move them the following week on moving day. You ask:

Segiteni **fog-sz** ezekkel a dobozzal?
help.INF FOG-NPST.2SG these.INSTR the box.INSTR
'*Will you help me with this box?*'

In this context, the Non-past seems out of place because as the weaker alternative, its use implies that the speaker is not in a position to use *fog*. And yet with the reference time provided by the context in this case the speaker *is* in fact in a position to use *fog*. As a result, the Non-past seems inappropriate, and is dispreferred, as in (45).

(45) Context: Imagine that you are planning to move next week. Your friend John is helping you pack boxes, and you ask him if he will also help you move them the following week on moving day. You ask:

?**Segitesz** ezekkel a dobozzal?
help.NPST.2SG these.INSTR the box.INSTR
Intended: '*Will you help me with this box?*'

In sum, some speech acts like directives and commissives are only compatible with future-referring utterances. This means that whenever utterances are understood as directives or commissives, non-future readings are eliminated from consideration. When only future readings are available, the Non-past is preferred for immediate futures because it is the weaker alternative of a Horn scale: its use implicates that the speaker is not in a position to make claims about periods further in the future. In contrast, *fog* is preferred in any contexts in which the reference interval begins after *now*.

This analysis is important not just for commissives and directives, but for any contexts in which non-future readings are very clearly unavailable. That is, we might expect to see the same pattern occurring with any other types of speech acts in which both interlocutors understand that only future-referring readings

are possible. A study of the range of this pattern, in which the Non-past is preferred for immediate futures and *fog* for more distant future reference, is beyond the scope of this work, but it seems plausible that it would arise at least with other illocutionary acts that have a propositional content condition requiring future temporal reference, such as invitations, oaths, or advice.

Immediate requests: *fog* is rude

There is evidence that for at least some speakers, *fog* is rude in requests. Recall that we looked above at the following pairs of utterances, and saw that due to the blocking effect that arises between the Non-past and *fog* with obligatorily future-referring speech acts, the Non-past is preferred with immediate reference intervals and *fog* is preferred with more distant reference intervals.

(46) a. Context: A friend is helping you move to a new home. The next box to be moved is too heavy to carry alone, so you ask your friend for help:

(i) **Segitesz** ezzel a dobozzal?
help.NPST.2SG this.INSTR the box.INSTR
'*Will you help me with this box?*'

(ii) ?Segiteni **fog-sz** ezzel a dobozzal?
help.INF FOG-NPST.2SG this.INSTR the box.INSTR
'*Will you help me with this box?*'

b. Context: Imagine that you are planning to move next week. Your friend John is helping you pack boxes, and you ask him if he will also help you move them the following week on moving day. You ask:

(i) ?**Segitesz** ezekkel a dobozzal?
help.NPST.2SG these.INSTR the box.INSTR
Intended: '*Will you help me with this box?*'

(ii) Segiteni **fog-sz** ezekkel a dobozzal?
help.INF FOG-NPST.2SG these.INSTR the box.INSTR
'*Will you help me with this box?*'

We already know that the Non-past is preferred in requests with immediate future reference, but some speakers indicate that in addition, *fog* is overly direct, snarky, sarcastic, or rude in requests, as shown in (46a). We have accounted for why *fog* should be dispreferred (it cannot convey that the reference interval begins *now*), but why should it be considered rude or sarcastic?

Imagine that speaker X is in the context in (46a). X is standing over a heavy box, ready to lift it but in need of help. X has a choice as to whether to use the Non-past or *fog* to request assistance. In this context, the time at which X wants help is clearly *now*: they are observably ready and waiting for help to lift the box. The Non-past allows for the inclusion of *now* in the reference interval, and thereby is a good choice to convey that X wants help right away. Specifically, the Non-past is a better choice than *fog*, which indicates only that X wants help at some point in the future. But what happens if X does choose *fog* in this circumstance? The choice of *fog* in a sense seems to contradict the physical evidence: X is waiting for help, but doesn't ask for immediate help. Instead, X asks for help at any time after now, implying that *now* is not a time at which they need help. The use of *fog* rather than the Non-past in such a context seems to amount

to saying something like (47).

(47) Will you ever/eventually/at some point help me with these boxes?

When uttered in a context in which the speaker evidently does need help *now*, (47) implies that the speaker feels impatient, or like their expectations or hopes are not being met. Likewise with *fog*: in this context, it conveys that X is waiting for help, but doesn't necessarily expect to get it when they need it.

In sum, the Non-past is preferred for immediate requests. If *fog* is uttered in a situation in which the hearer can observe that the speaker wants help *now*, the request for help in the future is at odds with the evidence that help is needed now, and this can be interpreted as an expression of impatience or dissatisfaction. That is, a request for future help when it is needed now is interpreted as facetious, resulting in the sense of rudeness or sarcasm reported by speakers.

Hearer-agent warnings: the Non-past is rude

We saw in §3.0.1 that speakers also exhibit a preference for the Non-past in immediate future contexts and *fog* in distant future contexts in indirect warnings. In contrast to the pattern above in which *fog* is rude in immediate requests, some speakers indicate that the Non-past is rude in some indirect warnings.

According to the definition of directives, the utterance of *P* as a warning is intended to cause the hearer to take some future action. We saw above that in some warnings, neither interlocutor can influence whether the event described by the proposition comes to pass. In other kinds of warnings, the hearer's actions can impact *P*. If neither interlocutor can impact *P*, then the goal of the warning is to cause the hearer to take action to avoid being negatively impacted by *P*, as in warnings of natural disasters and similarly unavoidable events. If the hearer can influence *P*, then the warning is intended to cause the hearer to take action to make sure *P* does not come to pass, as in the case of warning someone with untied laces that they will trip and fall. We can call these 'hearer-agent warnings'.

In at least some cases of hearer-agent warnings, the Non-past is considered rude.[17] For example, (48) shows a context in which the reference interval (the time of the exam) is known by both interlocutors to be a day after the speech time. For reasons discussed above, we expect *fog* to be preferred over the Non-past: since *fog* is the stronger of the two options, *fog* should be used if its temporal requirement (that the reference interval be < *now*) is met. However, speakers indicate that not only do they prefer *fog* in (48), they also feel that the Non-past is rude, or too direct.

(48) Context: You are in high school. You meet up with a friend and mention tomorrow's exam. He tells you he hasn't studied, and you respond:

a. ?Nem tanul-tál? **Meg-buk-sz**!
NEG study-PST.2SG? PART-FAIL-NPST.2SG!
'*You didn't study? You're going to fail!*'

b. Nem tanul-tál? Meg **fog-sz** buk-ni!
NEG study-PST.2SG? PART FOG-NPST.2SG fail-INF!
'*You didn't study? You're going to fail!*'

Whence the rudeness? As above with the rudeness of *fog* in immediate requests, we can look to the reasons a speaker might have for choosing a dispreferred construction to explain the Non-past's rudeness with

17 However, I do not have evidence that the examples in (23) and (24), in which a speaker warns a hearer that they may fall, show this pattern. So, it is likely that only some hearer-agent warnings are rude with the Non-past.

hearer-agent requests.

Imagine that we are in the context in (48), in which both interlocutors know when the upcoming exam will take place, and I am dismayed by your irresponsible choice to not study. Because the reference interval is the time of the exam, which is tomorrow, *fog* is preferred: the reference interval is in the future and to give a warning about that time, the stronger option, *fog* is preferable. What happens if I choose the dispreferred option? Recall that to use the weaker member of the Horn scale, the Non-past, I must be in a position where I cannot truthfully make the stronger claim: that *P* holds after *now*. That is, I can claim that *P* holds *now*, but I cannot say one way or the other whether *P* holds further into the future. In short, the use of the Non-past gives rise to the implicature that *P* holds now. In the case of failing the exam, this conveys that the matter is settled: it is already the case that you fail the exam. In other words, it is too late to do anything about it. If it is too late for you to take action to avoid *P*, then the warning itself is no longer of the hearer-agent variety. We can loosely paraphrase the sense conveyed by the use of the Non-past in this context with something like (49).

(49) You didn't study? You'll inevitably/definitely fail!

Because (49) does not leave room for the addressee to avoid the outcome of *P*, it cannot be considered a hearer-agent warning. In fact, I am not sure it can be considered a warning at all. Warnings, by definition, involve the intention that the hearer take action. But what action could be taken in this example, if failing is settled? Unlike the natural disaster examples, it is not clear that anything can be done to prepare or avoid being negatively impacted by *P*. So, if the speaker conveys that there is nothing to be done, the utterance comes across as merely critical or dismissive, rather than concerned or helpful, and hence speakers report that the Non-past is rude or overly direct.

6.4 Puzzles for the future

This section documents some remaining puzzles about the distribution between the Non-past and *fog* in future-referring utterances. Some if not all of these judgements and interpretive differences are subtle, and not all of them have been tested rigorously with a range of speakers. As a result, it would not be surprising if not all speakers agree with the judgements below. With that said, all the following puzzles exhibit patterns reported by at least some speakers, and so deserve attention. Unfortunately, accounting for these puzzles will have to remain a task for future work.

6.4.1 Commands: *fog* for disobedient hearers

In Hungarian, both the Non-past and *fog* can be used equally well to give commands, but they are best suited to different contexts.[18] In (50), the context provided suggests that given the normal parent-child relationship, the speaker expects her command to be obeyed.

(50) Context: Imagine that your child, Lilla, has announced that she is going outside to play. You want her to clean her room first, so you say:

18 Hungarian has an imperative, which of course is also perfectly acceptable in commands:

(i) Context: Imagine that your child, Lilla, has announced that she is going outside to play. You want her to clean her room first, so you say:

Nem, **Tisztitsd ki** a szobádat!
NEG clean-NPST.2SG PART the room.POSS.2SG.ACC
'*No, you ARE going to clean your room!*'

a. Nem, (először/előbb) ki **fog-od** takarít-ani a szobádat!
NEG, (first/before) PART FOG-NPST.2SG clean-INF the room.POSS.2SG.ACC
'*No, (first) you are going to clean your room!*'

b. Nem, **ki-takarít-od** a szobádat!
NEG, PART-clean-NPST.2SG the room.POSS.2SG.ACC
'*No, (first) you are going to clean your room!*'

In (32), the Non-past is slightly preferred if the command is intended to be obeyed immediately, but otherwise both the Non-past and *fog* are perfectly acceptable.

In contrast, the context in (51) indicates that the speaker does not expect the hearer to obey the command. In this case, *fog* is preferred by more speakers.

(51) Context: Now imagine that Lilla, who wants to play outside, has a long history of never obeying your instructions. You really don't think that she will listen to you or do what you say, but nevertheless you tell her:

a. Nem, (először/előbb) ki **fog-od** takarít-ani a szobádat!
NEG, (first/before) PART FOG-NPST.2SG clean-INF the room.POSS.2SG.ACC
'*No, (first) you ARE going to clean your room!*'

b. Nem, (először/előbb) **ki-takarít-od** a szobádat!
NEG (first/before) PART-clean-NPST.2SG the room.POSS.2SG.ACC
'*No, (first) you ARE going to clean your room!*'

Although both sentences in (51) are perfectly acceptable, *fog* is preferred by more speakers in the context in which the hearer is expected to disobey. Why is this? Some speakers indicated that it seems 'stronger' or 'heavier' and emphasized the command.

6.4.2 Copley (2009): differences between the simple and progressive present

As mentioned in Chapter 5, English has two futurates: the Simple Present and the Progressive. There is an intuition that a subtle difference in meaning exists between the Simple futurate and the Progressive futurate, as in (52).

(52) a. Is Joe going skydiving tomorrow?
b. Does Joe go skydiving tomorrow?[19]

Copley argues that this difference is the result of an additional presupposition that is present with the English Simple futurate, and absent with the Progressive. She argues that a sentence like (52b) presupposes that Joe is going skydiving at some point in the future, and asks whether it is tomorrow that he is skydiving.

The broader picture is that Copley claims that Progressive futurates assert that the event described by the predicate will take place. She argues that Simple futurates presuppose that the event will take place, and what is asserted is that the event will take place at a certain time. In other words, what is asserted in Progressive futurates is presupposed in Simple futurates.

I am not sure how convincing this is. The judgement is very subtle, and the intuition that in (52b)

19 I use the yes-no question form here because I think it is easier to notice a difference than in declaratives.

John will go skydiving some other time if he doesn't go tomorrow doesn't seem to be present, or at least necessary, for all English speakers.

It seems possible that focus is playing a confounding role here. If 'tomorrow' is stressed, then we seem to get just the reading that Copley is associating with the Simple futurate: it is presupposed that John is skydiving at some point, and the question is when. This is not that surprising, and of course if 'Joe' or 'skydiving' is stressed in (52b) instead, there are clear presuppositions that result from contrastive focus in these cases as well. What is less obvious is why for some speakers, the presupposition that Copley argues for arises even when 'tomorrow' is not focused.[20]

Data elicited from a Hungarian speaker suggests that for the extent to which this pattern holds in English, regardless of the cause, it also occurs in Hungarian. For at least some Hungarian speakers, the Non-past construction gives rise to a presupposition like the one Copley argues for with English Simple futurate, as in her example sentence in (53a). The *fog* construction seems not to allow for such a presupposition, as in (53b).

(53) a. János nem siel vasarnap.
János NEG ski.NPST.3SG Sunday
'*János doesn't ski on Sunday.*'

Presupposition: János will ski some other time

b. János nem **fog** siel-ni vasarnap.
János NEG fog.3SG ski-INF Sunday
'*János will not ski on Sunday.*'

I hope to explore this puzzle further in future research. For now its cause and the range of the pattern will have to remain open questions.

6.4.3 No *talán* 'maybe' with *fog*

There is evidence to suggest that in at least some cases, *talán* 'maybe' is incompatible with *fog*, but acceptable in future-referring constructions containing the Non-past, as in (54).[21]

20 See, e.g., **?** for more on the interaction of focus with presuppositions.

21 Google hits are notoriously problematic, but a comparison of the number of results for Non-past and *fog* constructions containing talán is suggestive of an incompatibility between *talán* and *fog*:

(i) a. **207 results**
Holnap megy-ek.
tomorrow go-NPST.1SG
'*I go tomorrow.*'

b. **18 results**
Talán holnap megy-ek.
maybe tomorrow go-NPST.1SG
'*Maybe I go tomorrow.*'

c. **39 results**
holnap fog-ok menni.
tomorrow FOG-NPST.1SG go.INF
'*Tomorrow I will go.*'

(54) Context: What are you doing tomorrow?

a. Nem is tud-om, talán el-megy-ek vásárol(-gat)-ni.
NEG too know-NPST.1SG, maybe PART-go-NPST.1SG shop-(ITER)-INF
'*I don't know, maybe I'll go shopping.*'

b. #Nem is tud-om, talán **fog-ok** el-menni vásárol(-gat)-ni.
NEG too know-NPST.1SG, maybe FOG-NPST.1SG PART-go-INF shop-(ITER)-INF
'*I don't know, maybe I'll go shopping.*'

It is not clear to me whether this is a restriction specific to the word *talán*, or if other elements with similar meanings are also incompatible with *fog*. The following example (provided by an informant) is felicitous, but a single example does not constitute evidence either way.

(55) Context: Interlocutors are looking at a sick sapling and debating whether it will grow.

Lehet, hogy ki **fog** nő-ni (a fa), majd
is.possible.NPST, that PART FOG.NPST.3SG grow-INF (the tree), in.the.future
meg-lát-juk...
PART-see-NPST.1PL
'*It's possible that [it] (the tree) will grow, we will see...*'

Determining the nature of the incompatibility between the Non-past and *talán*, its scope, and cause, would provide an appealing avenue for future reference, particularly as it might clarify whether the modal component proposed in Chapter 5 for *fog* is an oversimplification.

6.5 Individual variation

So far we have looked at cases in which a majority of speakers exhibit a preference for either the Non-past or *fog* in future-referring utterances in specific contexts. We found in Chapter 5 that many of these cases were explainable through the interaction of aspectual properties of the predicate with the semantics of the Non-past and *fog*. In this chapter, we looked at the remainder of these cases through the lens of indirect speech acts. It turns out that these categories can illuminate further patterns. Specifically, there are some illocutionary acts for speakers have no preference for *fog* or the Non-past. In these cases, both constructions are available for conveying the speech act. In contrast, there are other illocutionary acts for which some speakers prefer the Non-past and others prefer *fog*. That is, for some speech acts there is a clear division

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d. **No results found**
Talán holnap fog-ok menni.
maybe tomorrow FOG-NPST.1SG go.INF
'*Maybe tomorrow I will go.*'

e. **3 results**
Talán fog-ok menni.
maybe FOG-NPST.1SG go.INF
'*Maybe I will go.*'

Permutations of word order yield similar numbers, with the exception of *fogok menni talán*, which yields higher results because *talán* can be part of the next clause.

between speakers: approximately half of the speakers in question prefer the Non-past, and the other half prefer *fog*. The sections below briefly describe a few speech acts that exhibit these patterns.

I make no attempt to offer an explanation. All I can say at this stage is that for the small pool of speakers that were consulted, the patterns do not seem to be clearly correlated to age, sex, or whether they were raised and live in Hungary or elsewhere.

6.5.1 Predictions

In contexts in which a speaker makes a prediction about a future eventuality which can't be planned or calculated at the speech time, there is no clear preference between speakers for either conveying future reference with the Non-past or *fog*.

Let's take, for example, the classic Red Sox/Yankees example. In a context in which the Red Sox are scheduled to play the Yankees tomorrow, it is not possible for interlocutors to know who will win.[22] It is nonetheless natural for speakers to claim that their favourite team is going to win, as in (56), thereby asserting their faith in and support for their team.

(56) Context: I express to a friend my confidence about tonight's game.

a. The Red Sox **are going to** win!
b. The Red Sox **will** win!

The same is true for Hungarian, as we saw in §3.1. Both *fog* and the Non-past are acceptable for many speakers in this context, as shown in (57).

(57) Context: Imagine that you are a Red Sox fan. You're discussing tomorrow's game with a Yankees fan. You believe your team can win, and you want to support them, so you say:

a. A Red Sox nyer-ni **fog**!
the Red Sox win-INF FOG.NPST.3SG
'*The Red Sox will win!*'

b. A Red Sox **nyer**!
the Red Sox win-INF
'*The Red Sox win!*'

However, some speakers do prefer the version containing *fog* in (57a).[23] Some of these speakers feel that the Non-past is 'too general', and some feel that the Non-past is unacceptable because the event takes place in the future. Yet other speakers feel that the Non-past indicates more confidence than *fog*.

Why does this matter? It tells us that there is significant individual variation in terms of how speakers understand the function of the Non-past vs. *fog* as methods to convey future reference. Many speakers have distinct and contradicting views on when these constructions are appropriate. Those speakers who

22 At least, setting aside for the moment rigged games and prescience.

23 Some speakers may prefer the following word order:

(i) Context: I express to a friend my confidence about tonight's game.
A Red Sox **fog** nyer-ni!
the Red Sox FOG-NPST.3SG win-INF
'*The Red Sox will win!*'

find the Non-past inappropriate to convey future reference in (57) must have a different perception of the conditions required to license its use than those speakers who feel that both are acceptable but that the Non-past conveys more confidence.

We will see more such cases in which speakers have conflicting preferences below.

6.5.2 Plans

Reports of future plans show significant individual variation in terms of whether the Non-past or *fog* is preferred, as we saw with predictions. In (58), speakers are split as to whether they prefer *fog* or the Non-past.

(58) Context: Imagine that your friend Mari comes over to help you prepare for János's birthday party. You want to describe how the preparations are going, so you say:

a. Laci **süt** egy tortát.
Laci bake.NPST.3SG a cake.ACC
'*Laci will bake a cake.*'

b. Laci **fog** süt-ni egy tortát.
Laci FOG.NPST.3SG bake.INF a cake.ACC
'*Laci will bake a cake.*'

Although some speakers have no preference between (58a) and (58b), most speakers do have a distinct preference for one over the other. However, neither *fog* nor the Non-past seems to be preferred by a substantial majority. That is, speakers have conflicting views with respect to whether these constructions can be used to express plans like in (58).

6.5.3 Promises

Hungarian speakers can use either the Non-past or *fog* to make promises. As with predictions and reports of plans for the future, some speakers prefer the Non-past, and some prefer *fog*. In the example below, some speakers find the versions with *de* 'but' preferable to those without, and other speakers prefer those without *de*.

(59) Context: Imagine that you are having a birthday party tomorrow. Your friend Tibor promised he would attend, but you doubt he will. When you confront him, he says:

a. El **fog-ok** menni a buli-ba!
PART FOG-NPST.1SG go.INF the party-ILL
'*I WILL go to the party!*'

b. **El-megy-ek** a buli-ba!
PART-go-NPST.1SG the party-ILL
'*I WILL go to the party!*'

c. **De** el fog-ok menni a buli-ba!
but PART FOG-NPST.1SG go.INF the party-ILL

'*But I WILL go to the party!*'

d. **De** el-megy-ek a buli-ba!
but PART-go-NPST.1SG the party-ILL
'*I WILL go to the party!*'

Some speakers prefer *fog* over the Non-past in this context, particularly the version without *de* in (59d), but others prefer the Non-past. Some speakers who prefer the Non-past feel that *fog* is overly formal or stuffy.

In sum, speakers are split in their views about whether the Non-past or *fog* is preferable for making promises.

6.6 Conclusion

This chapter offered an analysis of uses of the Non-past and *fog* as they are used in indirect speech acts with future temporal reference. We saw that through an understanding of the different types of speech acts and how indirect speech acts are interpreted (Searle 1969, 1975, 1976; Searle & Vanderveken 1985), we could provide a preliminary account of a range of speaker preferences for one construction over another in certain contexts. Specifically, the Non-past is preferred for immediate future reference in speech acts that involve a propositional content condition requiring future reference. Due to this propositional content condition, event-in-progress and characterizing readings are unavailable. When both constructions can only give rise to readings with future temporal reference, the only interpretive difference between them is that the Non-past is compatible with reference times that overlap with the utterance time. The result is that the Non-past is used when speakers want to indicate that it is important that the proposition holds at the speech time. So, the Non-past is used with requests for immediate help, commands to be obeyed immediately, warnings about immediate events, and other speech acts concerning immediate future-oriented propositions. When the Non-past is not used, then, an inference arises that the reference interval does not begin immediately. Further, it was proposed that in specific circumstances, choosing the unexpected alternative subverts the purpose of the speech act, thereby resulting in a sense of rudeness or sarcasm.

In short, this chapter showed that the temporal properties of the semantics proposed for the Non-past and *fog* interact with properties of predicates and contexts to give rise to a range of available readings and uses of these constructions. More broadly, an analysis based on a simple and minimal difference in the temporal properties of the Non-past and *fog* could account for a wide range of interpretive effects without requiring the introduction of additional complexity to the semantics of the constructions in question. This approach contrasts with some previous work on capturing differences in interpretations of future-referring expressions (e.g. Copley 2009), and raises the question of whether such an approach could prove fruitful cross-linguistically.

Future work in this area might involve an analysis of the 'puzzles' described in §4 as well as a better-developed understanding of the contradictory preferences of speakers in §5. One could also explore whether a similar analysis could account for any of the differences in interpretations and uses of the four constructions available for expressing future reference in English: the simple present, the present progressive, 'be going to', and 'will'.

Chapter 7

Conclusion

In Hungarian, only Past tense is marked with overt grammaticalized morphology. Although there are reasons to consider non-past temporal reference to be marked with a null Non-past tense marker, no other tense marking exists in the language. Further, unlike many languages with minimal or non-existent tense systems (see Tonhauser 2015), Hungarian has no systematic marking of grammatical aspect. I argued in this thesis that as a language with a minimal tense and aspect system, Hungarian can offer insight into how temporal distinctions can be expressed indirectly.

Chapter 2 provided a background on basic facts of Hungarian. I provided lexical entries for the Past and Non-past tense, and introduced auxiliary verbs as a primary method of expressing modality in the language. This set the stage for discussions in subsequent chapters.

In Chapter 3, I introduced the discourse particle *éppen*. I argued that *éppen* can, under certain conditions, act as an aspect marker. In sentences containing atelic dynamic predicates, *éppen* specifies event-in-progress readings. In sentences containing telic predicates, it gives rise to completive readings. In sentences containing adjectival and nominal predicates, *éppen* gives rise to an inference of temporal contingence, or that *P* only holds temporarily. By analyzing *éppen* as an inquiry-terminating discourse marker in the tradition of Beaver & Clark (2008), I offered a unified account of how *éppen* gives rise to these three aspectually distinct interpretations when it occurs with different predicate types. Further, I proposed in Chapter 4 that this analysis could be extended to account for non-aspectual uses of *éppen* as a precisifier (like English 'exactly', 'right', 'just') of sorts.

To my knowledge, this is the first instance of a discourse particle being observed to act as an aspect marker. This raises a number of questions, including whether this might be a strategy in other languages with minimal aspect systems, and how this function arose from a diachronic perspective. More work needs to be done on the interaction of *éppen* with focus and other scope-taking elements, as well as on the syntactic structure of sentences containing *éppen* in its various capacities.

In Chapter 5 I proposed an account of future reference in Hungarian as expressed with either the Non-past or *fog*. The Non-past is associated with a number of distinct readings depending on the aspectual properties of the predicate it combines with, including event-in-progress readings, characterizing readings, and continuous readings. The presence or absence of explicit temporal frame expressions and clear contextual cues interact with properties of predicates and aspectual operators in order to determine the temporal reference of Non-past sentences. I argued that in contrast, *fog* is a modal verb that always obligatorily gives rise to future temporal reference because it is restricted to occurring with a metaphysical modal base. The limitations on the circumstances in which the Non-past can give rise to future reference factor into whether speakers choose the Non-past or *fog* for future reference in a given situation. In Chapter 6, I argued that properties of certain kinds of speech act contexts interact with the semantics of the Non-past and *fog* in a way that impacts whether speakers will prefer *fog* or the Non-past. I proposed that Searle's classification of illocutionary acts and his analysis of how indirect speech acts are interpreted (see Searle

1969, 1975, 1976; Searle & Vanderveken 1985) allow for a characterization of the contextual properties that explain preferences for either the Non-past or *fog* for future reference.

This analysis of future reference, which relies on the interaction between the semantics of the Non-past and *fog* and properties of predicates, allows us to account for a wide range of distributional effects with fairly minimalistic machinery. It should be determined how well such an account could be extended to the system of future reference in English, particularly the features of this analysis (like the blocking relation between the Non-past and *fog* when they occur with stative predicates) that have not been seen in some form in previous analyses of English (e.g. Copley 2009).

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